

Data Management Plans (DMPs) for Research Proposals

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Researchers' Development of a Data Management Plan: Session 1 For Federal Aviation Administration 2021-07-28



Workshop Schedule

Wednesday, July 28: Workshop 1:

Data Management Plans (DMPs) for Research **Proposals**

Wednesday, July 28 to Monday August 2:

Homework:

Writing Your DMP

Wednesday, August 4:

Workshop 2:





Workshop 1 Overview

- U.S. DOT Public Access Plan
- Definitions
- Data Curation
- Break 1 [0.45 to 0.55]
- Data Management Plans
- Break 2 [1.25 to 1.35]
- Data Management Plan Writing Resources and Tools
 - · DMPTool Demo [1.45 to 2.15]
- DMP Writing Time [2.20 to 3.00]



U.S. DOT Public Access Plan

U.S. Open Data Initiatives

My Administration is committed to creating an unprecedented level of openness in Government. We will work together to ensure the public trust and establish a system of transparency, public participation, and collaboration. Openness will strengthen our democracy and promote efficiency and effectiveness in Government.

SECTION I, SHORT TITLE; TABLE OF CONTENTS.

- PRESIDENT OBAMA, 01/21/09



To expand the Government's use and administration of data to facilitate transparency

114TH CONGRESS 2D SESSION

To expand the Government's use and administration of data to facilitate transparency
2D SESSION

H. R. 5051

To expand the Government's use and administration of data to facilitate transparency, effective governance, and innovation, and for other purposes.

- 3 SECTION 1. SHORT TITLE; TABLE OF CONTENTS.
- (a) SHORT TITLE. This Act
- 5 "Open, Public, Electron
- 6 Data Act" or the "OPEN

U.S. Department of Transportation

National Transportation Library



(a) Second Time .—This Act may be alted as the "Foundations for Dyldence-Based Followshiling Act of 2016"

ĐATA.GOV





U.S. Department of Transportation

National Transportation Library

U.S. DOT Public Access Plan: NTL Mandates

Transportation Equity Act for the 21st Century (1998)

"...establish and maintain a National Transportation Library, which shall contain a collection of statistical and other information needed for transportation decision making at the Federal, State, and local levels."

Moving Ahead for Progress in the 21st Century Act (MAP-21) (2012)

- Acquire, preserve and manage transportation information and information products and services for use by DOT, other Federal agencies, and the public;
- · Central repository for DOT research results and technical publications; &
- · Central clearinghouse for transportation data and information of the Federal Government

White House Office of Science and Technology Policy memo (2013)

· requiring all Executive Departments and Agencies spending more than \$100 million/year on R&D to ensure public access to peer-reviewed publications and digital datasets arising from federally-funded scientific research

"Plan to Increase Public Access to the Results of Federally-Funded Scientific Research" (2015)

- · Serve as DOT Public Access solution by preserving and sharing research publications and data;
- · Maximize the impact of the Federal research investment; &
- · Preserve, index, and share data management plans

Foundations for Evidence-Based Policymaking Act of 2018, Title II: The Open, Public, Electronic, and



U.S. DOT Public Access Plan

Plan to Increase Public Access to the Results of Federally-Funded Scientific Research Version 1.1 December 15, 2016

- Information is the fundamental currency of transportation research, and drives the advances in safety, state of good repair, economic competitiveness, livable communities and environmental sustainability that such research enables.
- This plan sets out a framework for enhancing the tracking of the complete research lifecycle at the project level, from project initiation to the submission of project deliverables, and on to research implementation through the deployment of research outputs and products.
- This plan establishes objectives to ensure public access to Publications and Digital Data Sets arising from DOT-managed research and development (R&D) programs.
- · Many DOT R&D programs are already making data sharing a priority.... The purpose of this plan is to **scale and institutionalize** those intramural and extramural R&D **access practices** across the Department.





U.S. DOT Public Access Plan: Requirements

Researchers and authors are subject to U.S. DOT Public Access requirements if:

- · U.S. DOT funded scientific research;
- Newly funded or extended on or after January 1, 2016.

Exceptions:

- Research funded on or before 12/31/2015
- Small Business Innovation Research (SBIR) program research results
- Research conducted under formerly federal funds directed to alternative sources prior to their apportionment to a specific research program/project, including: state DOT funds; pooled funds; SP&R; and, TRB cooperative research programs

Researchers and authors will need to submit:

- · 2 3 page Data Management Plan (with proposal);
- · ORCiDs for each author;
- · Final peer-reviewed manuscript;
- · Final Digital Datasets; and,
- Any other written outputs (metadata, data documentation, final reports, technical reports, tech summaries, etc..: aka the Data Package)



https://doi.org/10.21949/1503647

U.S. DOT Public Access Plan: Guidance to Researchers

- Fulfilling **minimum metadata requirements**, including conformance/interoperability with the common core metadata required under the Open Data Policy (OMB-13-13): Project Open Data metadata schema.
- Choosing a repository which provides **persistent identifiers** for Digital Data Sets and listing the standards that a repository should follow for implementation of those identifiers.
- · Working with awardee(s), the data repository, and the DOT grant manager to ensure that:
 - · Data meet **minimum quality** standards
 - Data is appropriately **evaluated for** and **secured to prevent disclosure** of *personally identifiable information, protect proprietary interests, confidentiality, and intellectual property rights*.
 - Data is **licensed** in a manner that encourages both **access and reuse** (OMB-13-13).



Questions?

Definitions

Key Terms

Scientific Research

Activities comprising creative work undertaken on a systemic basis in order to increase the stock of knowledge, including knowledge of man, culture and society. [NOT: lab equipment, facilities, etc..]

Publications

Any final peer-reviewed manuscript accepted for publication, any intramural technical or final reports, and Any Scientific Research project written deliverable (e.g., technical/final reports) that arises from extramural research funded, either fully or partially, by federal funds awarded through a DOT-managed contract, grant, or other agreement.

Digital Datasets

All scientific data collected through research projects funded, either fully or partially, by federal funds awarded through a DOT contract, grant or other agreement or collected by DOT employees. Such scientific data are the digitally recorded factual materials resulting from research that is necessary to validate research findings.



Key Terms

Data Management

deliberate planning, creation, storage, access and preservation of data produced from a given investigation1, 2

Data Management Plan (DMP)

a knowledge management document for the data lifecycle

Data Curation

enables data discovery and retrieval, maintains data quality, adds value, and provides for re-use over time3

Data Science

drawing useful conclusions from large and diverse data sets through exploration, prediction, and inference4

Open Science

U.S. Department of Transportation Vities aiming to make scientific knowledge, methods, data and evidence freely available and National Transportation Library for everyone5

Data Curation

Benefits of Data Curation

- ·Protects Unique Data from Loss
- ·Improves Data Search & Retrieval
- ·Enables Reuse
- ·Facilitates Longitudinal and/or Meta Analyses

- · Avoids Duplication of Effort & Spending
- ·Increases Verifiability
- Opens New Lines of Scientific Discovery
- · Satisfies Public Access & Open Government & Legal Requirements

About Data Curation: Reactive Actions

Reactive

Curation & Preservation

- · Repository Ingest
- · Access & Reuse
- · Preservation/Mitigation
- · Format Migration
- · Disposition

About Data Curation: Proactive Actions

Reactive

Curation & Preservation

- · Repository Ingest
- · Access & Reuse
- · Preservation/Mitigation
- · Format Migration
- Disposition

Proactive

Creation & Collection

- Standard Workflows: *File Naming*
- · Data Management & Training: **DMPs**
- · Robust Documentation: Readme & Codes
- · Controlled Vocabularies: *Data Dictionaries*
- · Metadata Standards: *Choose & Publicize*
- Persistent Identification: **DOI**, **ORCID**, **ROR**
- · Preservation Planning: Repository & Backups



Linked Processes

Data Management (DM) is **Necessary Element** of Data Curation (DC)

$$DM \in DC$$

Data Curation (DC) Enables of Data Science (DS)

$$DC \Rightarrow DS$$

Data Curation Dependencies Model

Data Management ∈Data Curation ⇒ Data Science

$$DM \in DC \Rightarrow DS$$

You Have the Most Important Role

Well-planned and implemented data management:

- · Protects against data loss;
- · Allows for sharing and re-use;
- · Fulfills public access laws;
- · Is a vital element of curation and preservation;
- · Enables future data science and evidence-based decision-making

Questions?





Break: 10 Min

Data Management Plans (DMPs)



DMP for DOT Public Access

Data Management Plan (DMP)

A brief narrative document created as part of the research proposal.

A compliant DMP describes:

- The researcher's **plan for handling** the raw and final dataset(s) generated during research; and,
- How the research proposal **conforms to DOT policy** on the dissemination and **sharing** of research results.

A compliant DMP will include 6 sections which provide:

- · Name and contact information for the project;
- A description of the expected final research data to be produced;
- · An explanation of standards used for data and metadata collection, format, and content;
- A listing of policies for access and sharing the final research data, including provisions for appropriate protection of
 - Personal privacy;
 - Business confidentiality;
 - National security;
 - Intellectual property; and,
 - Other rights or requirements;
- Policies and provisions for re-use, re-distribution, and the production of derivatives; and,
- Plans for archiving of, and long-term access to, final research data and publications.



"Writing a DMP is an unreasonable burden. I don't

Researchers and authors and authors to U.S. DOT Public Access to U.S. requirements if:

- U.S. DOT funded scientific research;
- Newly funded or extended on or after January 1, 2016.

Exceptions:

- Research funded on or before 12/31/2015
- Small Business Innovation Research (SBIR) program research results
- Research conducted under formerly federal funds directed to alternative sources prior to their apportionment to a specific research program/project, including: state DOT funds; pooled funds; SP&R; and, TRB cooperative research programs

will need to submit a Data Package containing:

- **Data Management Plan (with** proposal);
- ORCiDs for each author;
- Final technical report(s) and/or peerreviewed manuscript(s);
- Final Digital Datasets; and,
- Any other written outputs (metadata, data documentation, tech summaries, etc..)



"DMPs and data preservation are unfunded mandates..."

From our FAQs:

National Transportation Library

Q. Should the budget and its justification specifically address the costs of implementing the DMP?

A. Yes.

As long as the costs are allowable in accordance with the applicable cost principles, and necessary to implement the DMP, such costs may be included of the proposal budget, and justified in the budget justification.

Price varies widely based on level of curatorial effort.

Staff time for data management should be included in budget.

Price of Storage Rule of thumb (for in DOT use-only, not for public distribution):

For 10 GB of data with at least file corruption and validity checking, as well as file format migration as needed, the cost should not exceed a one-time fee of \$150 for a data preservation period of at least 5 years. Don't be afraid Ask for estimate from

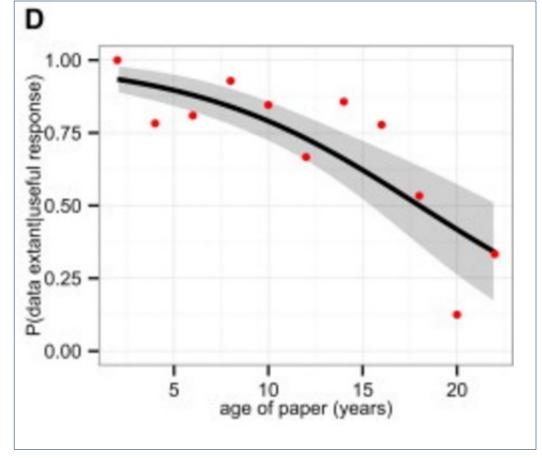
Chosen repository or University Library.

U.S. Department of Transportation

National Transportation Library

Data Management Protects Data from Loss

Data
Availability
Declines at
17% per year







Public Access Objectives

- Affirm and enhance DOT's **commitment to Public Access** to Scientific Research results, including digitally formatted scientific data without charge to the maximum extent possible.
- Support governance of and best practices for managing Public Access to peerreviewed Publications and Digital Data Sets across DOT.
- **Ensure continuous access** to and reliable preservation of DOT-funded Publications and Digital Data Sets for research, development and education purposes, within available resources.
- · Preserve and increase the use of Scientific Research results to enhance scientific discovery and deployment of research results.
- Enhance the use of Scientific Research results to promote innovation and economic competitiveness.
- · Affirm DOT's support for the reproducibility of Scientific Research results.
- · Make **DOT's research portfolio** available to the **public** at the project level.



DOT DMP Sections

0. Dataset and Contact Information

- 1. Data Description
- 2. Standards Employed
- 3. Access Policies
- 4. Re-Use, Redistribution, and Derivative Products Policies
- 5. Archiving and Preservation Plans
 - https://doi.org/10.21949/1520562

DOT DMP Sections and the Data Lifecycle

DMP Metadata



0. Dataset and Contact Information

Data creation



1. Data Description

2. Standards Used

Data's life beyond the original project

- 3. Access Policies
- 4. Re-Use, Redistribution, and Derivative Products Policies
- 5. Archiving and Preservation

https://doi.org/10.219 20562



DOT DMP Section 0: Dataset and Contact

0. Dataset and Contact Information

Staff lead: Enter lead researcher, PI, or lead staff name.

Staff lead ORCiD: Enter ORCID or other identifier.

Contact information: Add address, email, phone number, and agency's name.

Title of Dataset: Add title of dataset.

URL: Add URL to dataset.

This is an \blacksquare initial DMP or a \square revised DMP.

Date this version of DMP was written:

https://orcid.org/ Open Researcher & Contributor ID

- · ISO 27729
- · Distinguishes any person from every other person
- · Registered and globally unique
- https URI: 16-digit numerical identifier preceded by "https://orcid.org/" http://orcid.org/0000-0002-0543-4268

Getting an ORCID:

For more information on Persistent Identifiers and how to register for you own ORCID check out NTL's LibGuide.

- · Persistent Identifiers
 - · How to get an ORCID



DOT DMP Section 1: Data Description

Section Summary

- Provide a description of the data that you will be gathering in the course of your project.
- You should address the nature, scope, and scale of the data that will be collected.
- Describe the characteristics of the data, their relationship to other data, and provide sufficient detail so that reviewers will understand any disclosure risks that may apply.
- · Discuss value of the data over the long-term.

Prompts

- Name the data, data collection project, or data producing program.
- 2. Describe the purpose of the research.
- Describe the data that will be generated in terms of nature and scale (e.g., numerical data, image data, text sequences, video, audio, database, modeling data, source code, etc..).
- Describe methods for creating the data (e.g., simulated; observed; experimental; software; physical collections; sensors; satellite; enforcement activities; researcher-generated databases, tables, and/or spreadsheets; instrument generated digital data output such as images and video; etc..).
- 5. Discuss the period of time data will be collected and frequency of update.
- If using existing data, describe the relationship between the data you are collecting and existing data.
- 7. List potential users of the data.
- Discuss the potential value of the data have over the long-term for not only your institution, but also for the public.
- If you request permission not to make data publicly accessible, explain rationale for lack of public access.
- 10. Indicate the party responsible for managing the data.
- Describe how you will check for adherence to this data management plan



DOT DMP Section 2: Standards Used

Section Summary

- Describe the anticipated formats that your data and related files will use.
- To the maximum extent practicable, and in accordance with generally accepted practices in your field, your DMP should address how you will use platform-independent and non-proprietary formats to ensure maximum utility of the data in the future.
- If you are unable to use platform-independent and non-proprietary formats, you should specify the standards and formats that will be used and the rationale for using those standards and formats.
- · Identify the metadata standards you will use to describe the data

Prompts

- List in which format(s) the data will be collected. Indicate if they are open or proprietary.
- If you are using proprietary data formats, discuss your rationale for using those standards and formats.
- 3. Describe how versions of data be signified and/or controlled.
- If the file format(s) you are using is(are) not standard to your field, describe how you will document the alternative you are using.
- List what documentation you will be creating in order to make the data understandable by other researchers.
- Indicate what metadata schema you are using to describe the data. If the metadata schema is not one standard for your field, discuss your rationale for using that scheme.
- Describe how will the metadata be managed and stored.
- 8. Indicate what tools or software is required to read or view the data.
- 9. Describe your quality control measures.



DOT DMP Section 3: Access Policies

Section Summary

- Describe any access restrictions that may apply to your data. In general, data from research projects funded wholly or in part by U.S. DOT must be made publicly accessible. Exceptions to this policy are data that contain personally identifiable information, confidential business information, or classified information.
- Protecting research participants and guarding against the disclosure of identities and/or confidential business information is an essential norm in scientific research. Your DMP should address these issues and outline the efforts you will take to provide informed consent statements to participants, the steps you will take the protect privacy and confidentiality prior to archiving your data, and any additional concerns (e.g., embargo periods for your data). If necessary, describe any division of responsibilities for stewarding and protecting the data among Principal Investigators or other project staff.
- If you will not be able to deidentify the data in a manner that protects privacy and confidentiality while maintaining the utility of the dataset, you should describe the necessary restrictions on access and use. In general, in matters of human subject research, your DMP should describe how your informed consent forms will permit sharing with the research community and whether additional steps, such as an

iew Board (IRB), may be used to protect u.s. Department of Transportation identiality.

Prompts

- Describe what data will be publicly shared, how data files will be shared, and how others will access them.
- Indicate whether the data contain private or confidential information. If so:
 - Discuss how will you guard against disclosure of identities and/or confidential business information.
 - List what processes you will follow to provide informed consent to participants.
 - 3. State the party responsible for protecting the data.
- Describe what, if any, privacy, ethical, or confidentiality concerns are raised due to data sharing.
- If applicable, describe how you will deidentify your data before sharing. If not:
 - Identify what restrictions on access and use you will place on the data.
 - Discuss additional steps, if any you will use to protect privacy and confidentiality.

https://doi.org/10.21949/1520562



DOT DMP Section 4: Re-Use, Redistribution...

Section Summary

- Describe who will hold the intellectual property rights for the data created by your project.
- Describe whether you will transfer those rights to a data archive, if appropriate.
- · Identify whether any copyrights apply to the data, as might be the case when using data purchased from third parties.
- · If you will be enforcing terms of use or a requirement for data citation through a license, indicate as much in your DMP.
- Describe any other legal requirements that might need to be addressed.

Prompts

- Name who has the right to manage the data.
- Indicate who holds the intellectual property rights to the data.
- List any copyrights to the data. If so, indicate who owns them.
- 4. Discuss any rights be transferred to a data archive.
- Describe how your data will be licensed for reuse, redistribution, and derivative products.

DOT DMP Section 5: Archiving and Preservation

Section Summary

Describe how you intend to archive your data and why you have chosen that particular option. You may select from a variety of options including, but not limited to:

- · Use of an institutional repository
- · Use of an archive or other community-accepted data storage facility
- · Self-dissemination

You must describe the dataset that is being archived with a minimum amount of metadata that ensures its discoverability. Whatever archive option you choose, that archive must support the capture and provision of the US Federal Government Project Open Data Metadata Schema. In addition, the archive you choose must support the creation and maintenance of persistent identifiers (e.g., DOIs, handles, etc..) and must provide for maintenance of those identifiers throughout the preservation lifecycle of the data. Your plan should address how your archiving and preservation choices meet these requirements.

Prompts

- Discuss how you intend to archive your data and where (include URL).
- Indicate the approximate time period between data collection and submission to the archive.
- Identify where data will be stored prior to being sent to an archive. You should also:
- Describe how back-up, disaster recovery, off-site data storage, and other redundant storage strategies will be used to ensure the data's security and integrity.
- Describe how data will be protected from accidental or malicious modification or deletion prior to receipt by the archive.
- Discuss your chosen data archive's policies and practices for backup, disaster recovery, off-site data storage, and other redundant storage strategies to ensure the data's security and integrity for the long-term.
- Indicate how long the chosen archive will retain the data.
- Indicate if the chosen archive employs, or allows for the recording of, persistent identifiers linked to the data.
- Discuss how your chosen data repository meets the criteria outlined on the Guidelines for Evaluating Repositories for Conformance with the DOT Pul NTL's National Transportation Data Archive may be an option for your research data. Contact us at public.access@dot.gov for more information.



Commodity Flow Survey 2017

https://doi.org/10.21949/1522565

Data Management Plan (DMP) for Commodity Flow Survey (CFS) 2017 Dataset
Bureau of Transportation Statistics (BTS).

U.S. Department of Transportation (USDOT) 2021-06-01

Persistent link: https://doi.org/10.21949/1522565

Recommended Citation:

U.S. Department of Transportation, Bureau of Transportation Statistics. (2020). Commodity Flow Survey (CFS) 2017 [datasets]. https://doi.org/10.21949/1522565

Change log:

2021-06-01: Initial DMP written

CONTENTS

- 0. Dataset and Contact Information
- 1. Data Description
- Standards Employed
 Access Policies
- Re-Use, Redistribution, and Derivative Pro
- 5. Archiving and Preservation Plans
- 6. Policies Affecting this Data Management

0. Dataset and Contact Information

Staff lead: Jesse A. Long
Staff lead: Jesse A. Long
Staff lead ORCiD: https://orcid.org/0000-000
Contact information:1200 New Jessey Avenu
ntIdatacurator@dot.gov, 202-366-8951
U.S. Department of Transportation, Bureau o
Title of Dataset: Commodity Flow Survey (C
URL: https://doi.org/10.21949/1522565
This is an © initial DMP or a | revised DMI

Organizational Contact Information
Name: Commodity Flow Survey
Institution: Office of Data Development a
Department of Transportation
Address: 1200 New Jersey Ave SE, Wast
Email: cfu@dot.gov

1. Data Description: General:

The Commodity Flow Survey (CFS) is a join U.S. Census Bureau, U.S. Department of Cor level data on domestic freight shipments by e and selected retail and services trade industries located in the 50 states and the District of Coluprovided on the type, origin and destination, value, weight, modes of transportation, distance is miles of commodities shipped. The CFS is conducted every 5 years as part of the economic ce modal picture of national freight flows and represents the only publicly available source of cordata for the highway mode. The CFS was conducted in 1993, 1997, 2002, 2007, 2012, and mo 2017.

The CFS assesses the demand for transportation facilities and services, energy use, and safety environmental concerns. CFS data are used by policy makers and transportation planners in vastate, and local agencies. Additionally, business owners, private researchers, and analysts use t analyzing trends in the movement of goods, mapping spatial patterns of commodity and vehicl forecasting demands for the movement of goods, and determining needs for associated infrastrequipment.

The CFS publication provides data by shipment characteristics of commodities transported in publication data series include the geographic area series, temperature control series, exports a hazardous materials series.

Exports Shipments:

An export in the CFS is defined as shipment to a foreign country from the 50 states and Washi Shipments to U.S. possessions and territories are also treated as exports. Respondents to the CI report the foreign city, country of destination, and mode of transport by which the shipment le also asked the respondent to report the U.S. port, airport, or border crossing of exit and report mode. Of transport used to reach the U.S. destination. Due to the exclusion of industries outsid CFS (see Industry Coverage), these data are not directly comparable to the 2017 merchandise published by the Department of Commerce.

Shipment characteristics including value, tons, and ton-miles are presented in summary form it miles, which is defined as the shipment weight multiplied by the mileage traveled by the shipn domestic mileage only for the calculation.

Hazardous Materials Shipments:

The U.S. Department of Transportation defines hazardous materials as belonging to one of the classes, as shown below

Hazardous Material Classes

- Class 1—Explosives
- Class 2—Gases
- Class 3—Flammable Liquids
- Class 4—Flammable Solids
- Class 5-Oxidizing Substances and Organic Peroxides
- Class 6—Toxic Substances and Infectious Substances
- Class 7-Radioactive Materials
- Class 8—Corrosive Substances
- Class 9-Miscellaneous Hazardous Materials

As part of the shipment characteristics collected in the 2017 CFS, we asked respondents to provide the fourdigit United Nations (UN) or North American (NA) identification number. For the 2017 CFS data, we used the UN/NA code to: (1) identify the shipment as hazardous material, and (2) assign the shipment to one of the nine hazardous material classes for purposes of producing summary tabulations.

The data from the 2017 CFS for hazardous material shipments are aggregated to these nine classes, as well as their subcategories known as divisions. Data are also shown for selected UN/NA codes.

For the 2017 CFS, 26 Standard Classification of Transported Goods (SCTG) codes were identified as always being hazardous materials. Even if the respondent left the UNNA code blank, we assigned the shipment to the appropriate UNNA code. For example, every shipment of gasoline (SCTG 17110) was assigned a UNNA code of 1203 either by the respondent or during our tabulation process. When an SCTG could have translated to more than one UNNA code, the shipment was reviewed and the appropriate UNNA code was chosen.

Please note that because of the industry coverage and shipment definitions of the CFS, certain hazardous materials such as infectious substances or radioactive wastes were not well represented in the CFS data.

The UN classification system has been adopted for worldwide use by the United Nations Committee of Experts on the Transport of Dangerous Goods. The UN system was incorporated into the Federal Code of Regulations by the U.S. Department of Transportation for domestic transportation in 1980. The NA system is a parallel hazard identification system used in North America when transporting hazardous materials that are not assigned a UN number or when transporting under specific North American exceptions. For additional information about the UN or NA codes, please refer to Title 49. Code of Federal Regulations, Part 172.101.

2. Standards Employed:

The data files collected here are saved in the ubiquitous and common .csv file format. Documentation will include this data management plan, and the metadata and readme files created in 2021. Documentation will also include the variable definitions, tables, data dictionary, and relevant supporting files created alongside the data from 2017.

A Project Open Data Version 1.1. json metadata file will be created to describe the archival location of this data, and that .json file will be uploaded to data.gov and transportation.data.gov

Necessary software tools: The file formats found in the zip files include: txt files and .csv files, which can be opened using any text editor; xls files, which can be opened with Microsoft Excel, and other free available software, such as OpenRefine; .json files, which can be opened in text editors or xml editors; and, .pdf files which can be opened with PDF readers.

3. Access Policies:

These data files are in the public domain, an information.

Re-Use, Redistribution, and Derivative These data are managed by the Bureau of T be re-use without restriction.

Citation of the data is appreciated. Please us U.S. Department of Transportation, Survey (CFS) 2017 [datasets]. https://dx.

5. Archiving and Preservation Plans:

The dataset will be archived in the National (ROSA P). Prior to archiving, the data are singhtly. The US DOT systems are secured for the secur

Files in ROSA P are backed up in NTL driv

repository managing facility, daily; and in Amazon Web Service Cloud servers in Virginia and Oregon daily.

The dataset will be retained in perpetuity.

NTL staff will mint persistent Digital Object Identifiers (DOIs) for each dataset stored in ROSA P. These DOIs will be associated with dataset documentation as soon as they become available for use.

The DOIs associated with this dataset include: https://doi.org/10.21949/1522565

The assigned DOI resolves to the repository landing page for the "Commodity Flow Survey (CFS) 2017" dataset, so that users may locate associated metadata and supporting files.

ROSA P meets all the criteria outlined on the "Guidelines for Evaluating Repositories for Conformance with the DOT Public Access Plan" page: https://ntl.bts.gov/publicaccess/evaluatingrepositories.html

6. Policies Affecting this Data Management Plan

This data management plan was created to meet the requirements enumerated in the U.S. Department of Transportation's Plan to Increase Public Access to the Results of Federally-Funded Scientific Research' Version 1.1 <<

https://doi.org/10.21949/1520559 >> and guidelines suggested by the DOT Public Access website << https://doi.org/10.21949/1503647 >>, in effect and current as of December 03, 2020.



U.S. Department of Transportation
National Transportation Library

Questions about DMPs

Break: 10 Min

Data Management Plan Writing Resources and Tools



DOT DMPs: A Summary

A data management plan (DMP) describes how researchers will handle digital data both during and after a research project. DMPs will describe how the research proposal conforms to DOT policy on the dissemination and sharing of research results. Each plan should include a 2- to 3-page narrative description covering:

- The final research data to be produced in the course of the project;
- The standards to be used for data and metadata format and content;
- · Policies for access and sharing the final research data, including provisions for appropriate protection of privacy, confidentiality, security, intellectual
- · property, and other rights or requirements;
- · Policies and provisions for re-use, re-distribution, and the production of derivatives; and
- · Plans for archiving final research data and other research products, and for preservation of access to them.

DOT-funded research projects are expected to be conducted pursuant to the approved DMP.

A DMP may evolve as the research project evolves and should be reviewed for possible revision whenever a data management procedure is changed.





DMP Sections Guidelines

1. Data Description: Provide a description of the data that you will be gathering in the course of your project. You should address the nature, scope, and scale of the data that will be collected. Describe the characteristics of the data, their relationship to other data, and provide sufficient detail so that team members or reviewers will understand any disclosure risks that may apply. Discuss value of the data over the long-term.

As general guidance you may consider addressing the following:

- 1.01) Name the data, data collection project, or data producing program.
- 1.02) Describe the purpose of the research or data collection.
- 1.03) Describe the data that will be generated in terms of nature and scale (e.g., numerical data, image data, text sequences, video, audio, database, modeling data, source code, etc.).
- 1.04) Describe methods for creating the data (e.g., simulated; observed; experimental; software; physical collections; sensors; satellite; enforcement activities; researcher-generated databases, tables, and/or spreadsheets; instrument generated digital data output such as images and video; etc.).
- 1.05) Discuss the period of time data will be collected and frequency of update.
- 1.06) If using existing data, describe the relationship between the data you are collecting and existing data.
- 1.07) List potential users of the data.
- 1.08) Discuss the potential value of the data have accorded to be found only 11.5. INYT but also founds public.
- 1.09) If you request perm access.
- 1.010) Indicate the party re
- 1.011) Describe how you v

BTS DMP Worksheet

Generic

20161026

Creating Data Management Plans for Intramural Data Creators

Getting DMP Help at U.S. DOT

U.S. DOT researchers and offices are encouraged to follow data management best practices in order to ensure the long-term preservation of, and access to, research, statistical and other data created by the U.S. DOT. Further, good data management practices will help you comply with White House and DOT requirements for transparency and public access.

The National Transportation Library is happy to consult with DOT researchers and offices which need help implementing robust data management. Please contact us at NTL.data.curator@dot.gov to set up an appointment.

Data Management Plans (DMPs) Content Overview

A data management plan (DMP) describes how you will handle digital data both during and after a project. DMPs will describe how you will comply with DOT policy on the dissemination and sharing of research results and data. Each plan should include a 2-3 page narrative description covering:

- The final research or statistical data to be produced in the course of the project;
- · The standards to be used for data and metadata format and content;
- Policies for access and sharing the final datasets, including provisions for appropriate protection of privacy, confidentiality, security, intellectual property, and other rights or requirements;
- · Policies and provisions for re-use, re-distribution, and the production of derivatives; and
- Plans for archiving final data, publications, and other products, and for preservation of access to them.

DOT research and statistical projects will benefit if conducted pursuant to a robust DMP. A DMP may evolve as the project evolves and should be reviewed for possible revision whenever a data management procedure is changed.

Basic Information

0. Basic Information

- 0.01 Lead researcher, or lead staff name: Click here to enter lead research, PI, or lead staff name.
- 0.02 Lead researcher, or lead staff ORCiD or other identifier: Click here to enter ORCID or other identifier.
- 0.03 Lead researcher contact information: Click here to enter contact information here.
 0.04 Organization: Click here to enter the home organization of the lead listed above.
- 0.05 Other researchers: Click here to enter names and ORCiDs of other team members. Please separate individuals with semicolons.
- 0.06 Title of Research Proposal/Project: Click here to enter the title of proposal or project.
- 0.07 URL: Click here to enter URL
- 0.08 This is an □ initial DMP or a □ revised DMP.

DMP Template Worksheet

- Based word for word on DOT template
- Helps researchers gather needed information
- Answer each applicable prompt with a complete sentence: 2- to 4-page DMP come out the other end
- BTS-, DOT-, external researcher-tested!



U.S. DOT Public Access Guidance Pages

Bureau of Transportation Statistics

Topics and Geography

Statistical Products and Data

Home / National Transportation Library (NTL) / Public Access



DOT Public Access

Monday, March 1, 2021

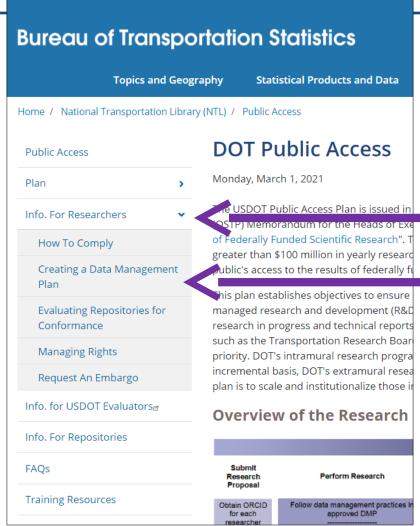
The USDOT Public Access Plan is issued in (OSTP) Memorandum for the Heads of Exe of Federally Funded Scientific Research". To greater than \$100 million in yearly research public's access to the results of federally fu

This plan establishes objectives to ensure a managed research and development (R&D research in progress and technical reports, such as the Transportation Research Board priority. DOT's intramural research prograi incremental basis, DOT's extramural research plan is to scale and institutionalize those in

Overview of the Research

https://doi.org/10.21949/15036

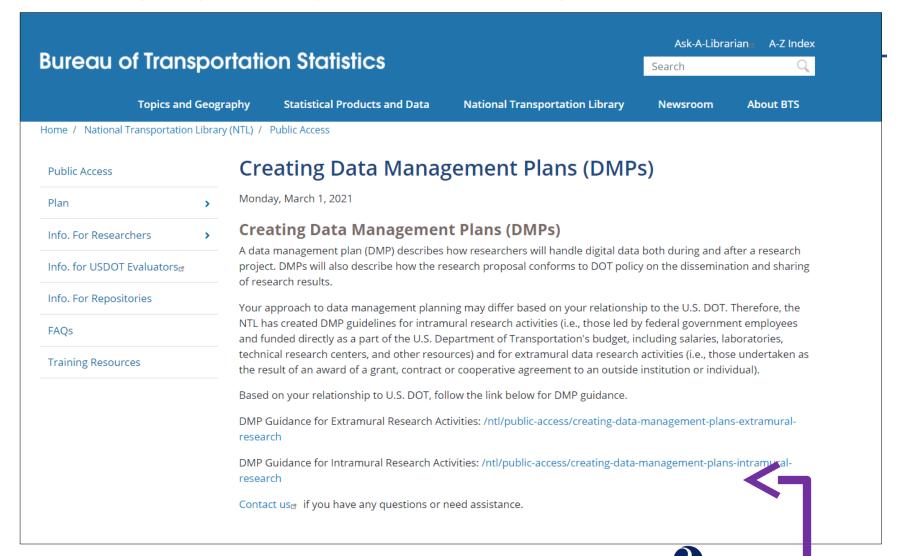
U.S. DOT DMP Guidance



https://doi.org/10.21949



U.S. DOT DMP Guidance





https://doi.org/10.21949/1520562

Intramural DMP Guidance

Home / National Transportation Library (NTL) / Public Access Public Access Plan Info. For Researchers Info. for USDOT Evaluators Info. For Repositories **FAQs Training Resources Tags** Public Access **Questions?** 1200 New Jersey Ave SE Washington, DC 20590 United States

Creating Data Management Plans for Intramural Research

Wednesday, June 12, 2019

Getting DMP Help at U.S. DOT

Data Management Plans (DMPs) for USDOT intramural research must address all five (5) areas below. If you need assistance creating DMPs for your research programs and projects, contact us at NTLDataCurator@dot.gov to set up an appointment.

Data Management Plans (DMPs) Content Overview

A data management plan (DMP) describes how researchers will handle digital data both during and after a research project. DMPs will describe how the research proposal conforms to DOT policy on the dissemination and sharing of research results. Each plan should include a 2-3 page narrative description covering:

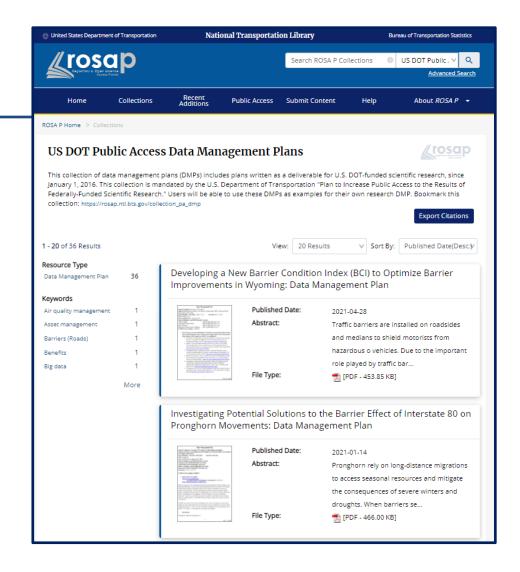
- The final research data to be produced in the course of the project;
- The standards to be used for data and metadata format and content:
- Policies for access and sharing the final research data, including provisions for appropriate protection of privacy, confidentiality, security, intellectual property, and other rights or requirements;
- Policies and provisions for re-use, re-distribution, and the production of derivatives; and
- Plans for archiving final research data and other research products, and for preservation of access to them.

DOT-funded research projects are expected to be conducted pursuant to the approved DMP. A DMP may evolve as the research project evolves and should be reviewed for possible revision whenever a data management procedure is changed.

Guidance on DMP Sections



US DOT **Public Access Data** Management Plans Collection



LIVE DEMO



https://dmptool.org/

What is the DMPTool?

The DMPTool is a free, open-source, online application that helps researchers create data management plans.

These plans, or DMPs, are now required by many funding agencies as part of the grant proposal submission process.

The DMPTool provides a click-through wizard for creating a DMP that complies with funder requirements. It also has direct links to funder websites, help text for answering questions, and resources for best practices surrounding data management.



Your Homework

- Write your Data Management Plan (DMP)
 - Word template,
 - Plain text template, or
 - DMPTool
- Submit to NTL by Monday, August 2, at 12:00
 Noon (Eastern)
 - Email: public.access@dot.gov
 - DMPTool Review function

Conclusions

- · Data Management begins at the program development stage
- · Project Managers should be versed in the U.S. DOT Public Access Plan
- · DOT-funded researchers must follow U.S. DOT Public Access Plan
- · Data management protects the public investment in scientific research
- · All other federal research funders are doing it
- · NTL provides guidance and training on data management and DMPs
- · Robust Data Management Plans Enable Strong Research Proposals

- US DOT Public Access webpages
- https://doi.org/10.21949/1503647



Questions?

public.access@dot.gov





DMP Writing Time



References

- U.S. Department of Transportation. (2015-12-15). Plan to Increase Public Access to the Results of Federally-Funded Scientific Research. [policy statement]. *National Transportation Library*. Access 2021-07-23 from https://rosap.ntl.bts.gov/view/dot/29637
- University Library, Texas A&M University. "Data Management Defined Research Data Management Guides at Texas A&M University." Research Data Management. Accessed from 2013-10-01 from http://guides.library.tamu.edu/DataManagement
- OPEN Government Data Act, S.2852, 114th Cong. (2016). https://www.congress.gov/bill/114th-congress/senate-bill/2852/all-info
- OPEN Government Data Act, H. R. 5051, 114th Cong. (2016). https://www.congress.gov/bill/114th-congress/house-bill/5051/related-bills
- 5. Transportation Equity Act for the 21st Century, H. R. 2400, 105th Cong. (1998). https://rosap.ntl.bts.gov/view/dot/13448
- Moving Ahead for Progress in the 21st Century Act (MAP-21): A Summary of Highway Provisions, P.L. 112-141 (2012). https://rosap.ntl.bts.gov/view/dot/53705
- White House "Transparency and Open Government" memo, January 21, 2009, https://obamawhitehouse.archives.gov/the-press-office/transparency-and-open-government

DMP Slide Walkthrough

Zoe Mann STIPDG Summer Intern 7/19/2021

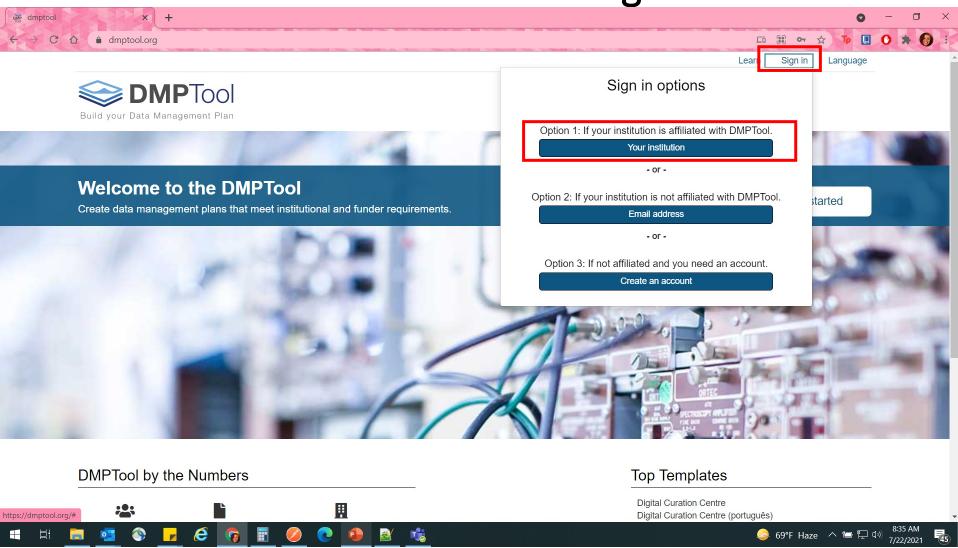
Introduction

- This slide walkthrough should serve as a reference for future DMP creation.
- These slides walkthrough the process to creating a DMP for the Truck Inventory and Use Survey (TIUS) 1972 Dataset.
- You should be able to follow this walkthrough substituting the necessary information for your own DMP plan.
 - The Notes section of the PPT contains written instructions for each slide, please reference them as necessary.
- Not every DMP will need to have every prompt filled out, as you will see with the 1972 TIUIS Dataset. Use your best judgement for your own data.
- And remember, DMPs are living documents, so if you don't know the answer to a question right away, that's ok! You can go back and edit the document at any point.

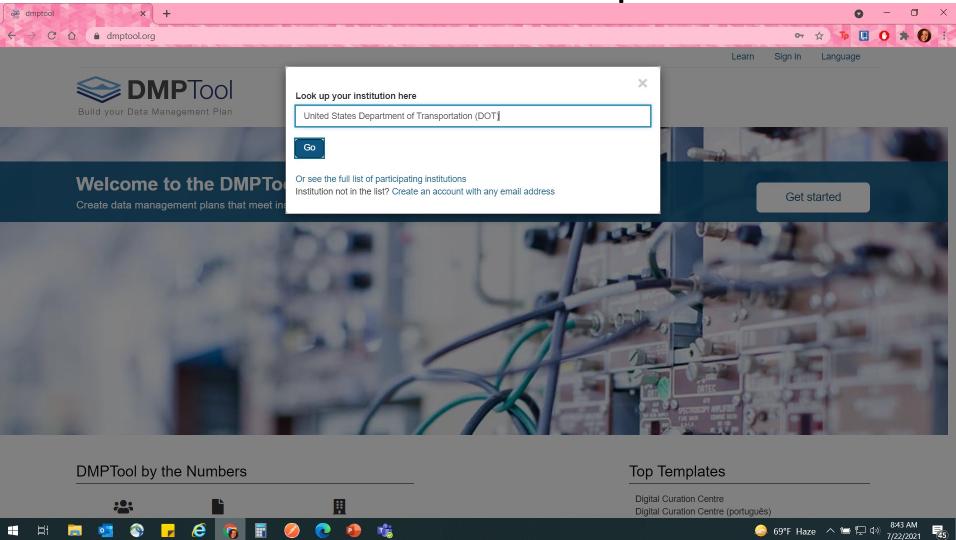
Setting Up Your Account

- Go to https://dmptool.org/
- · Sign into your account (instructions on next slides)

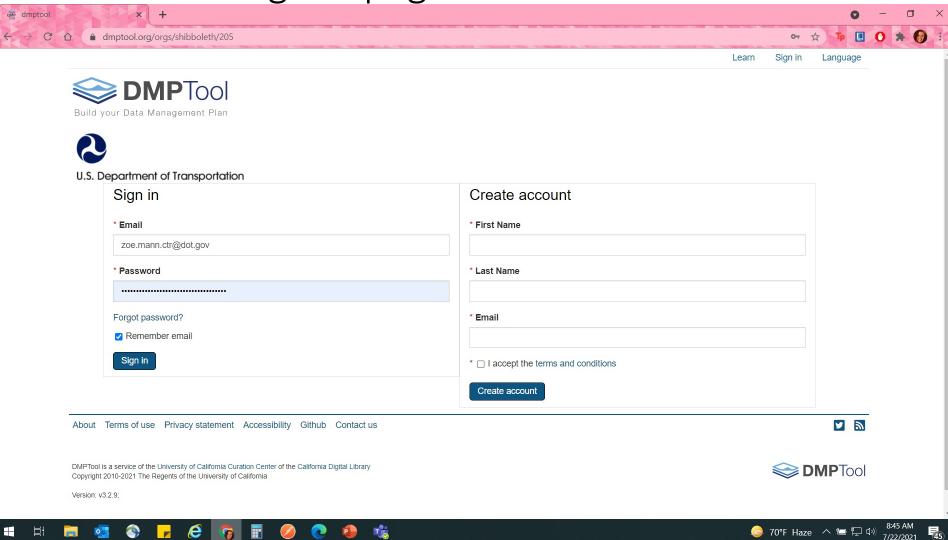
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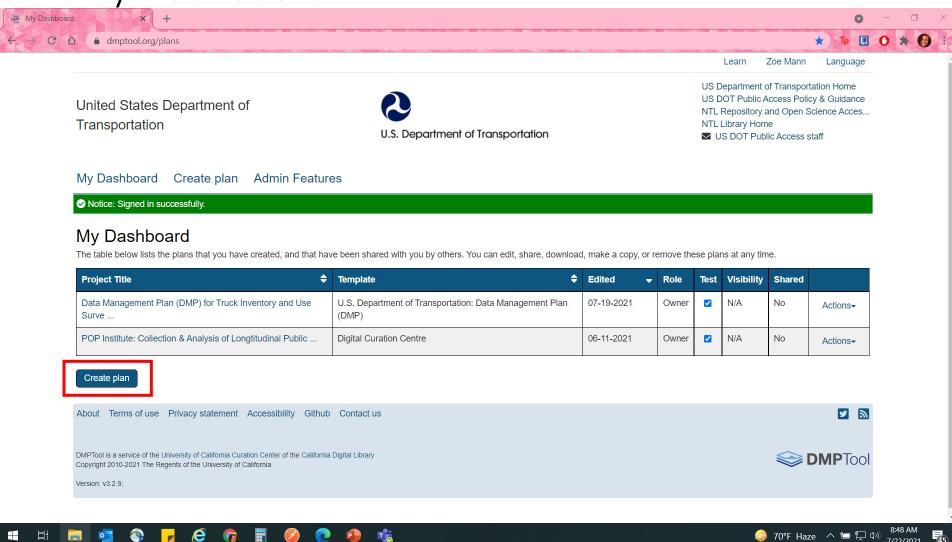
Institutional Choice Drop Down



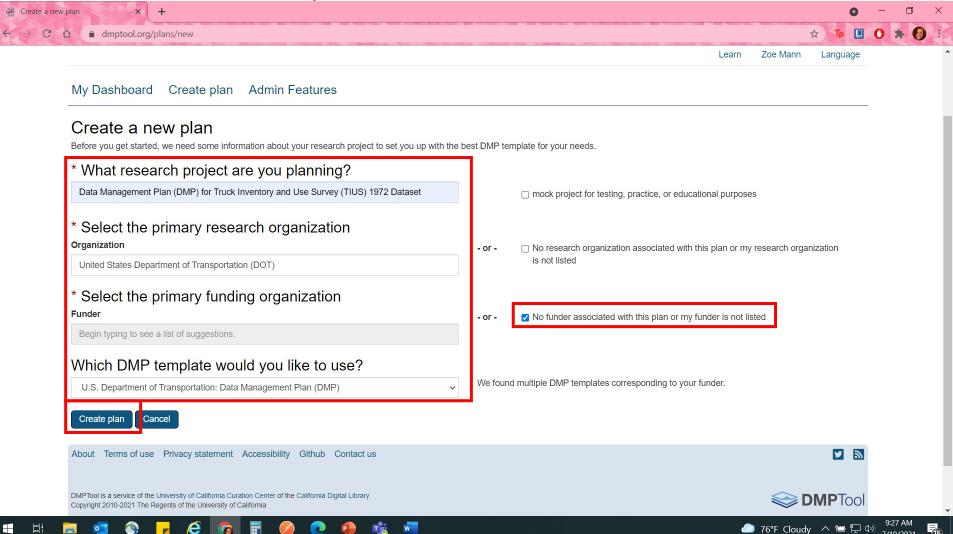
DMPTool Sign in page



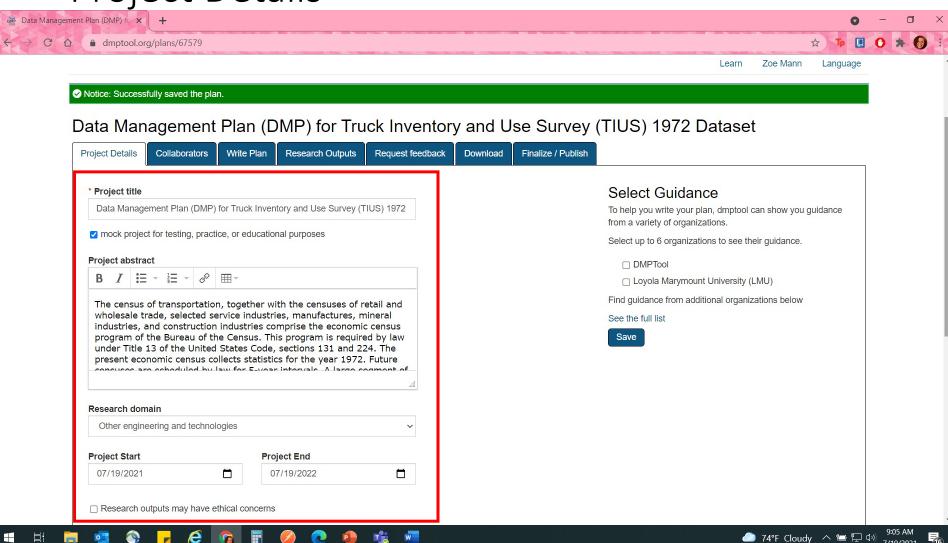
My Dashboard



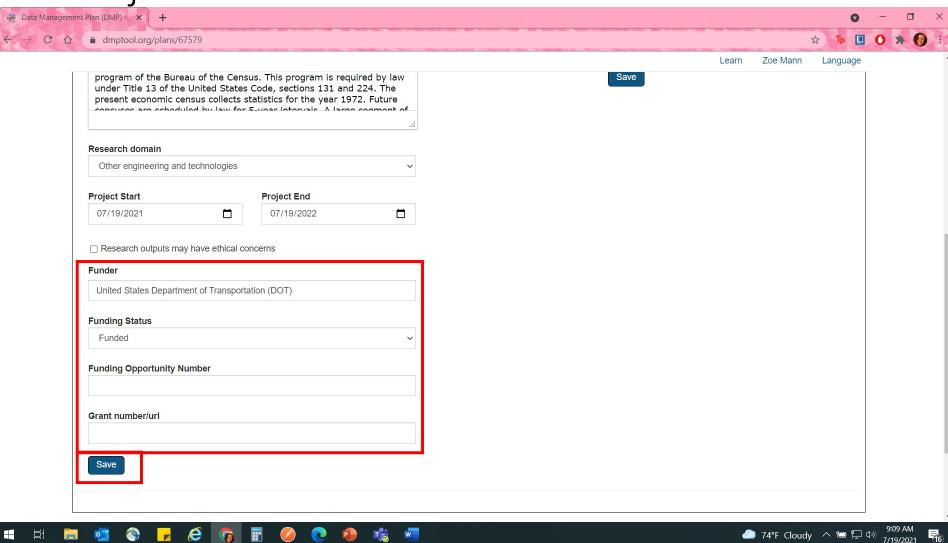
Create a new plan



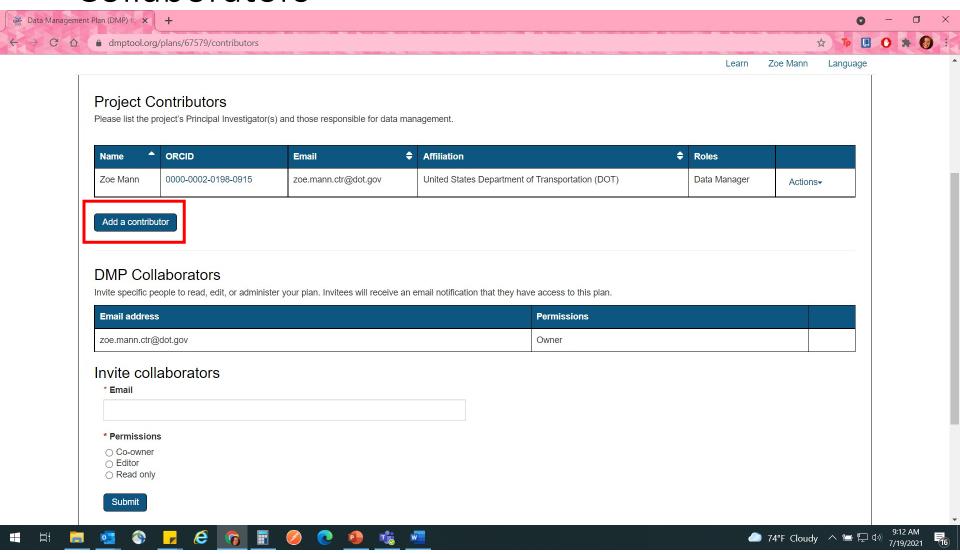
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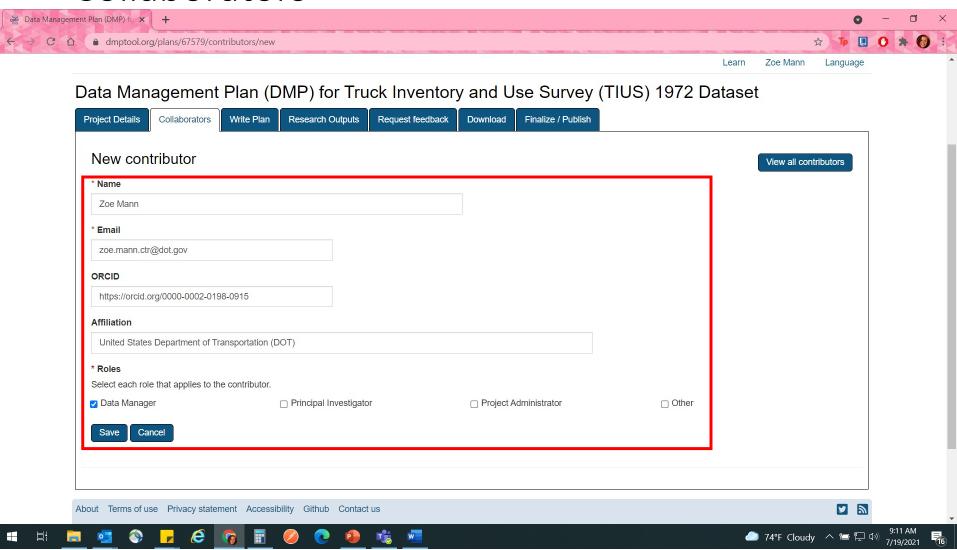
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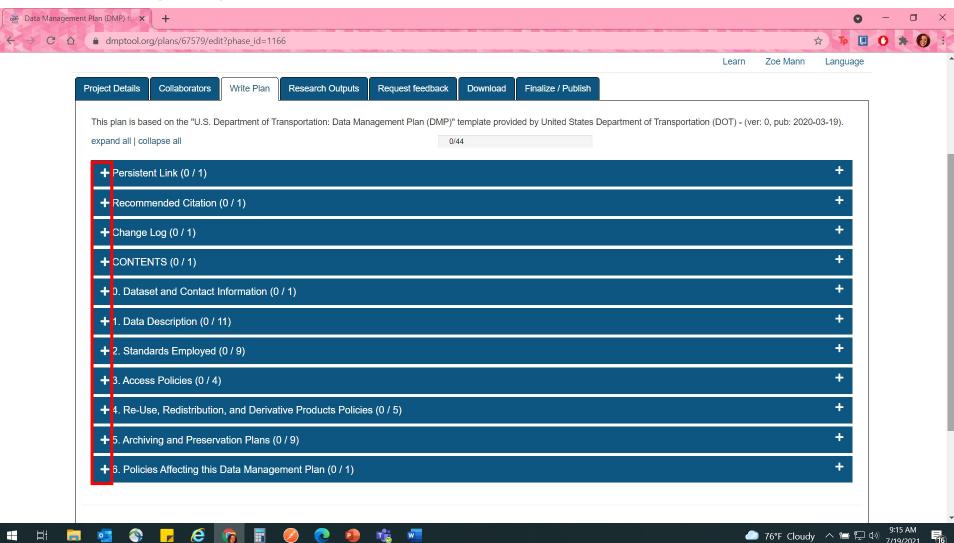
Collaborators



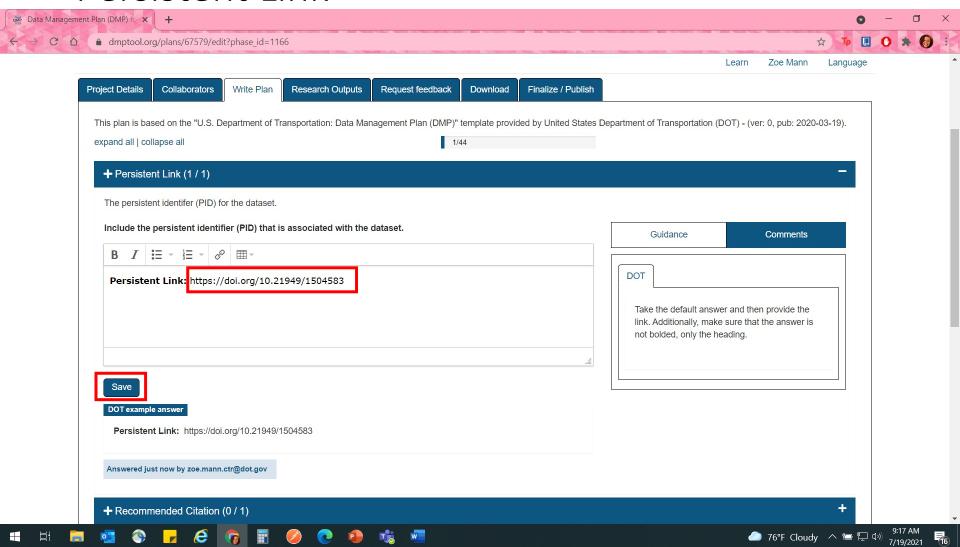
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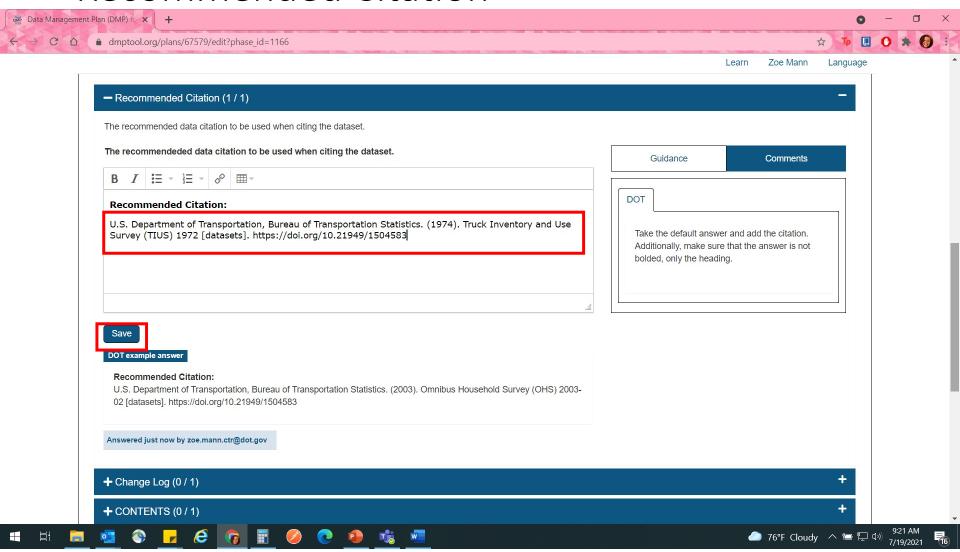
Write Plan



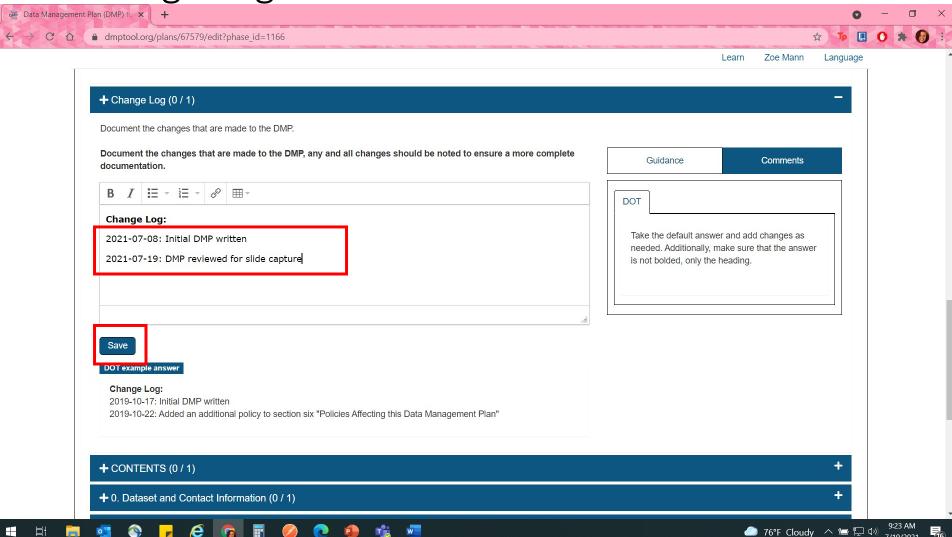
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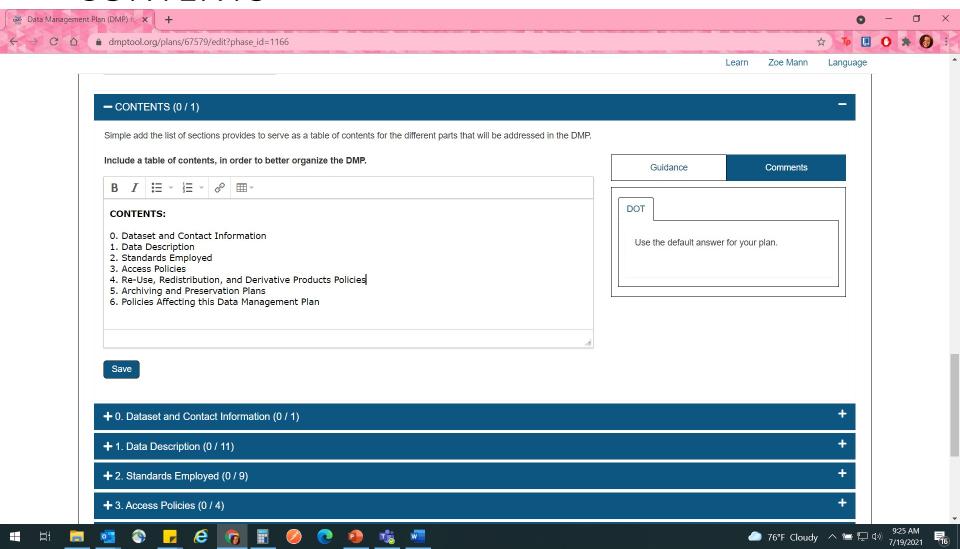
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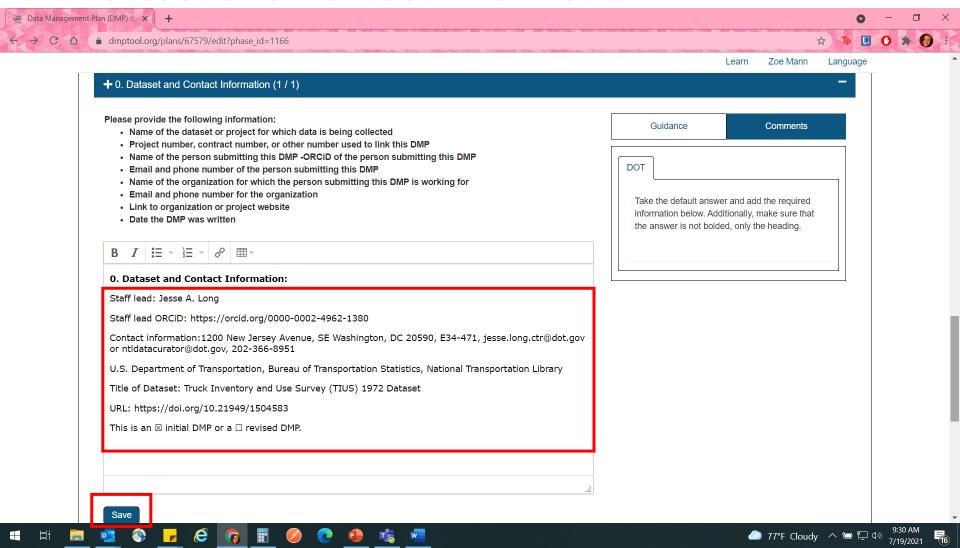
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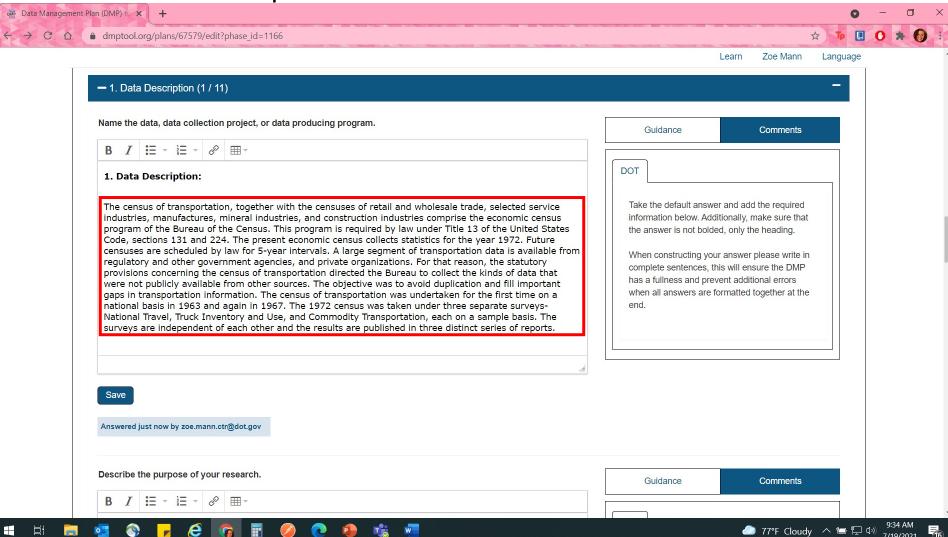
CONTENTS

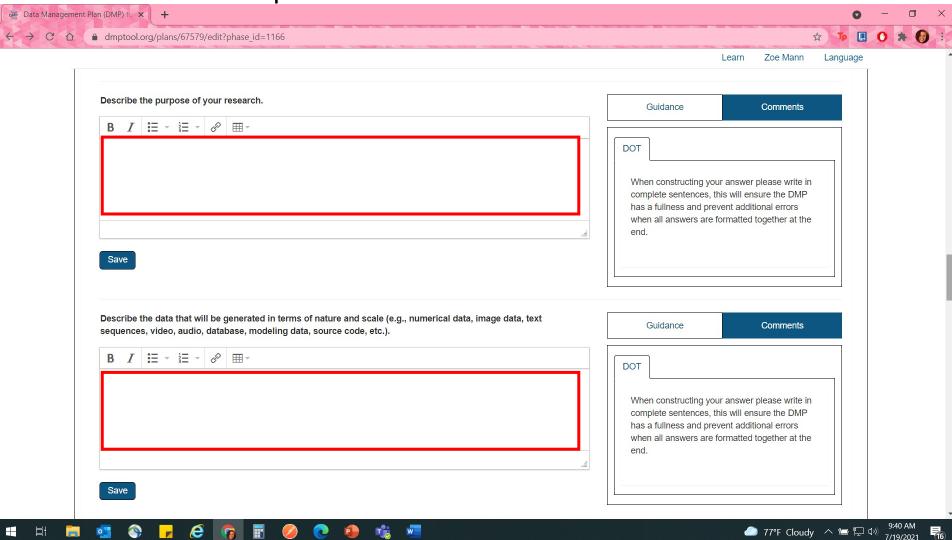


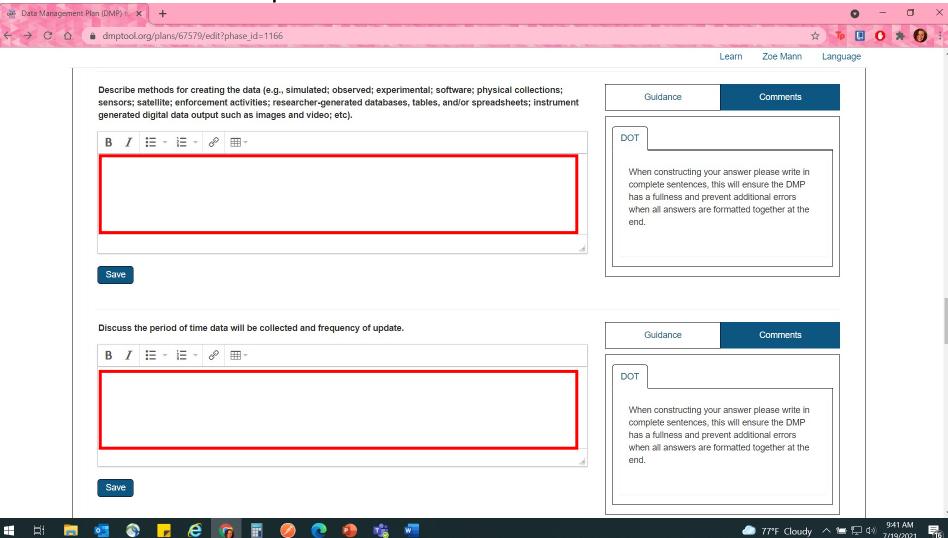
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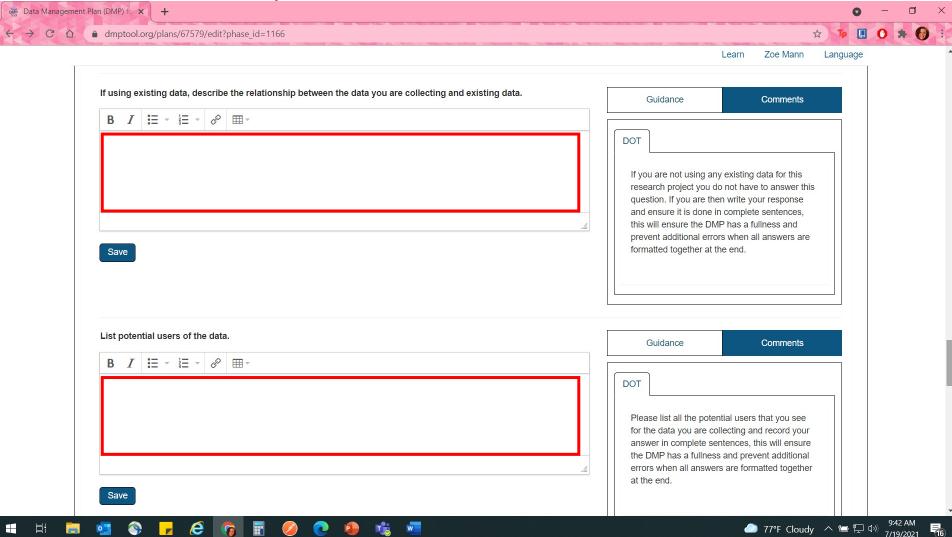


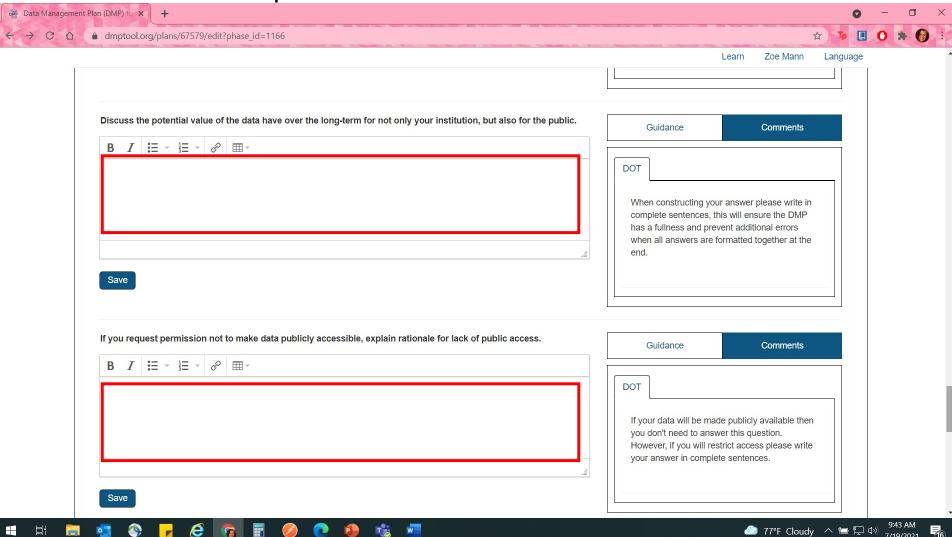
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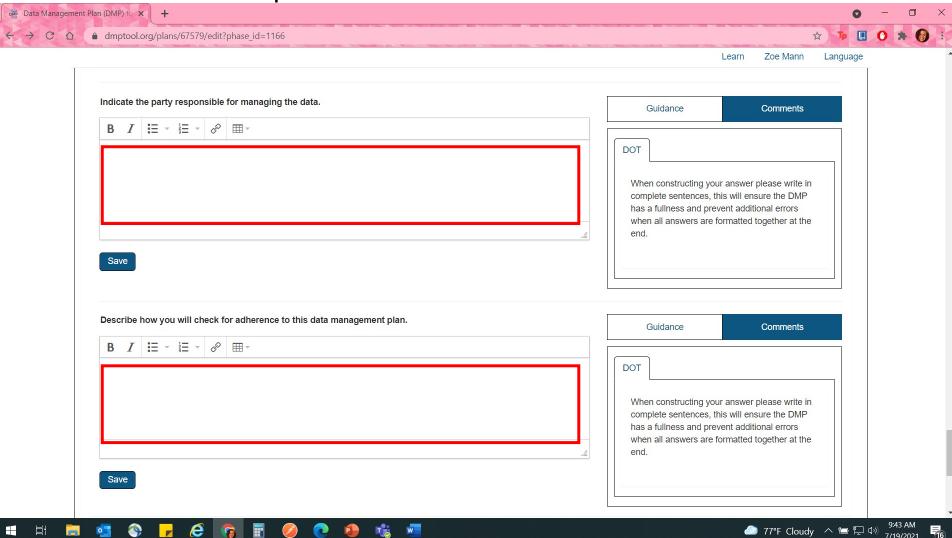


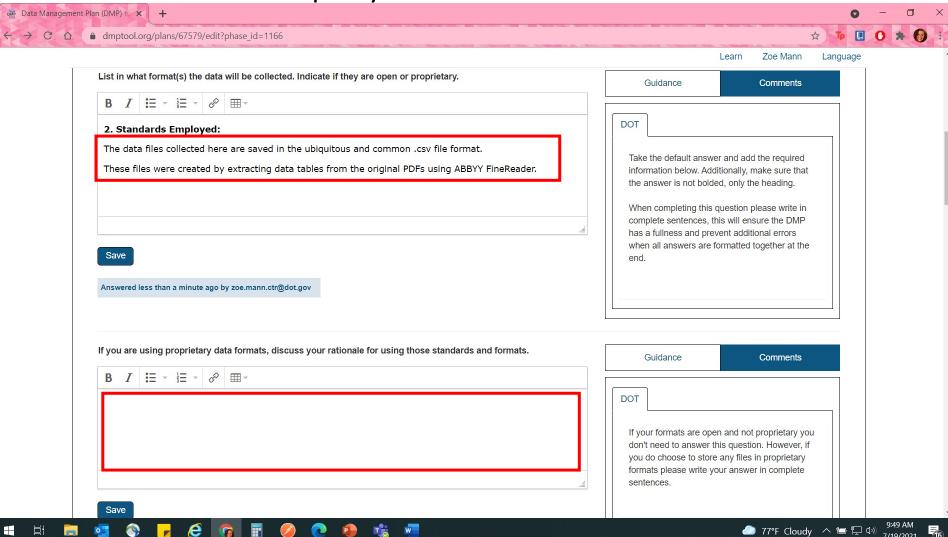


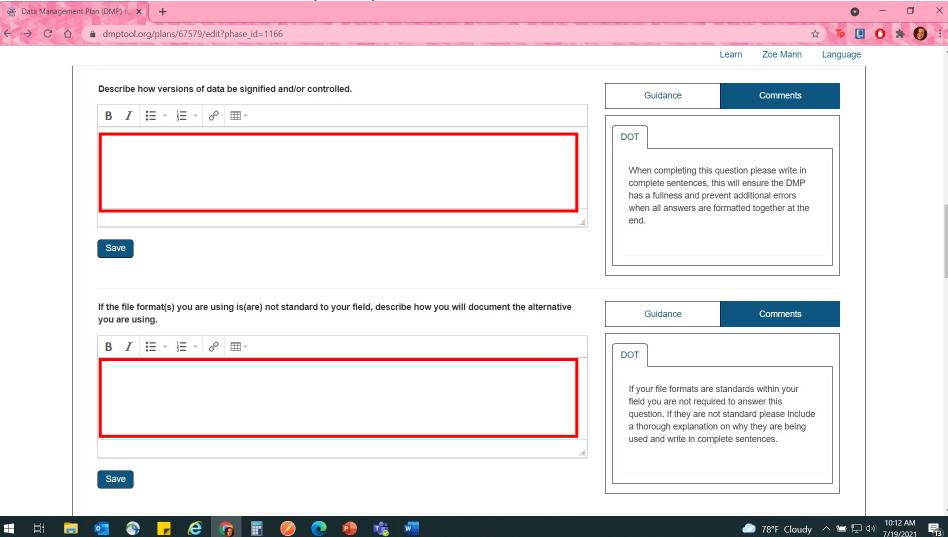


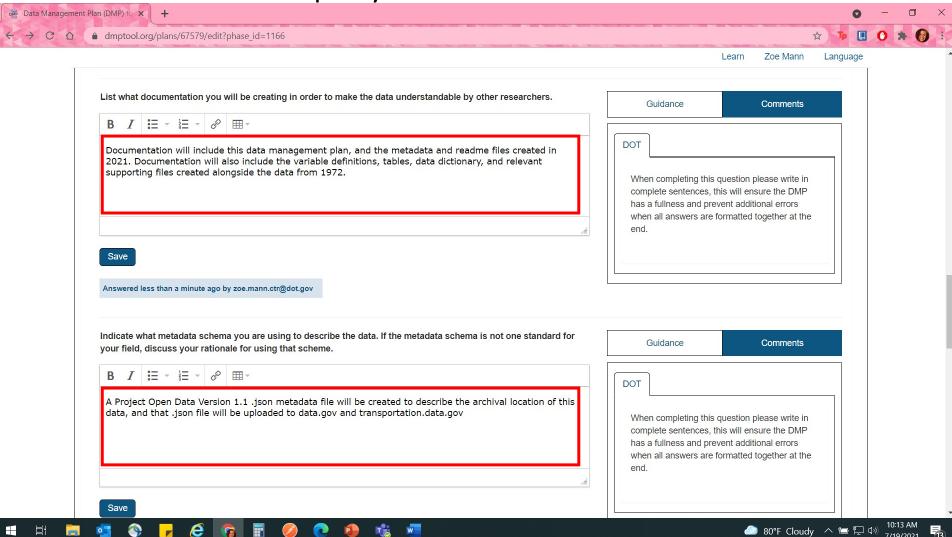


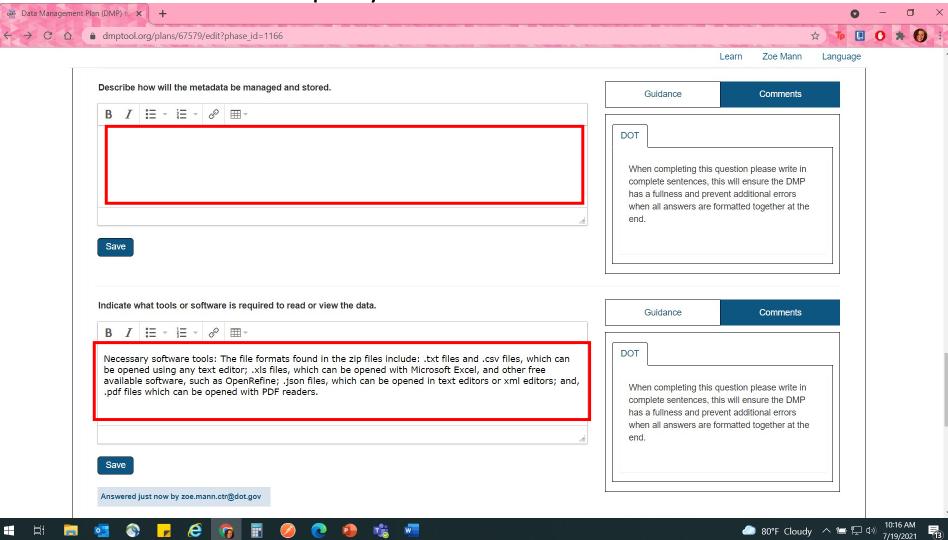


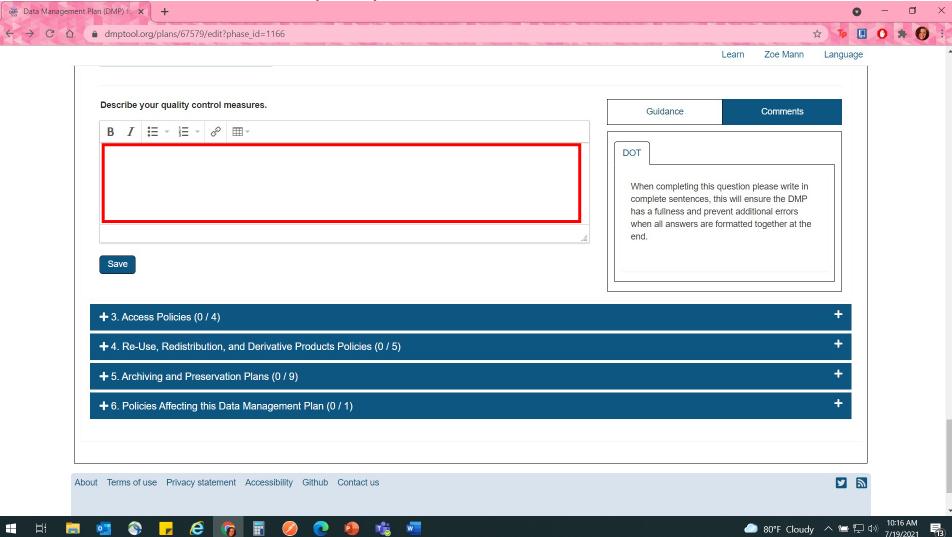




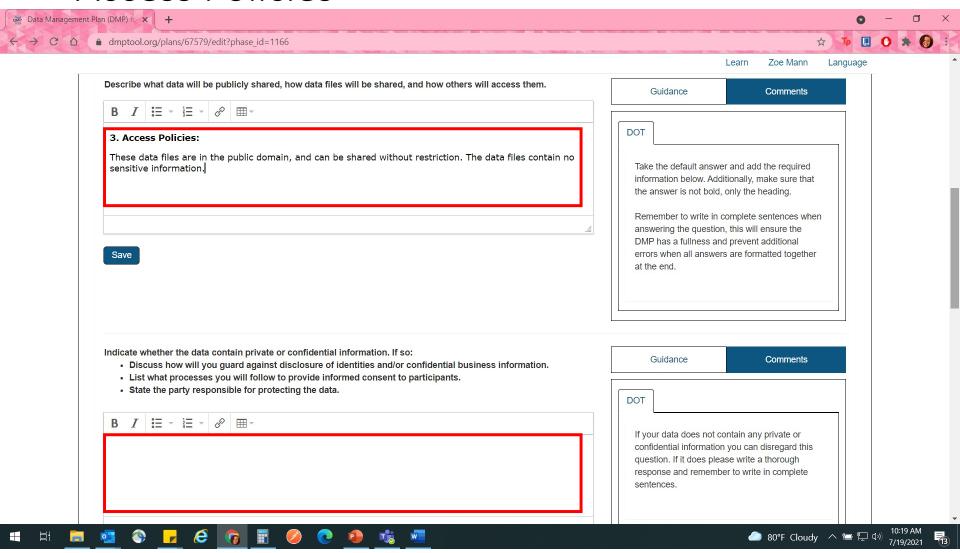




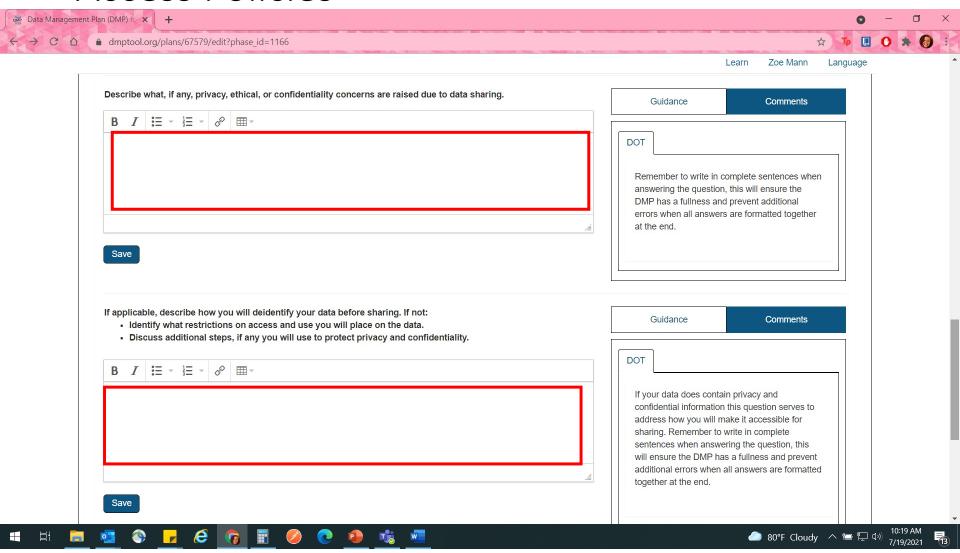




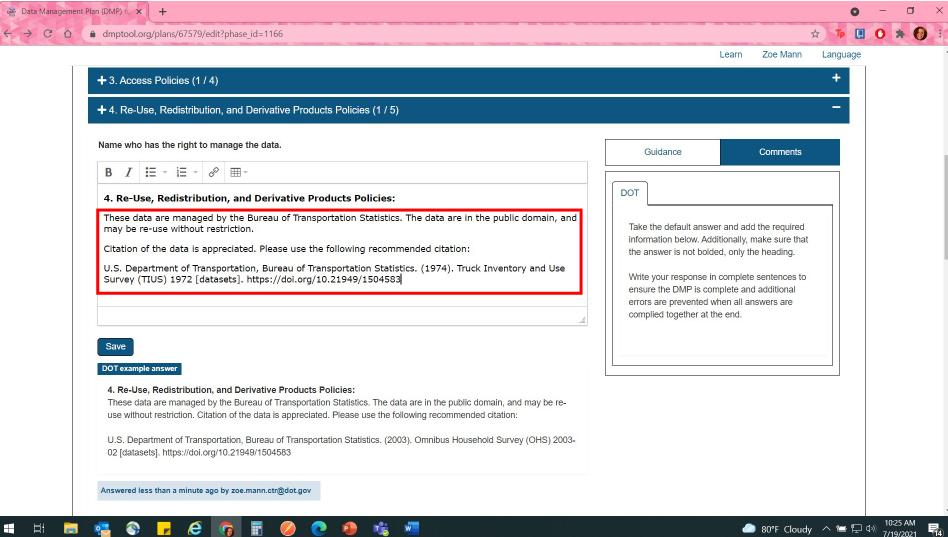
Access Policies



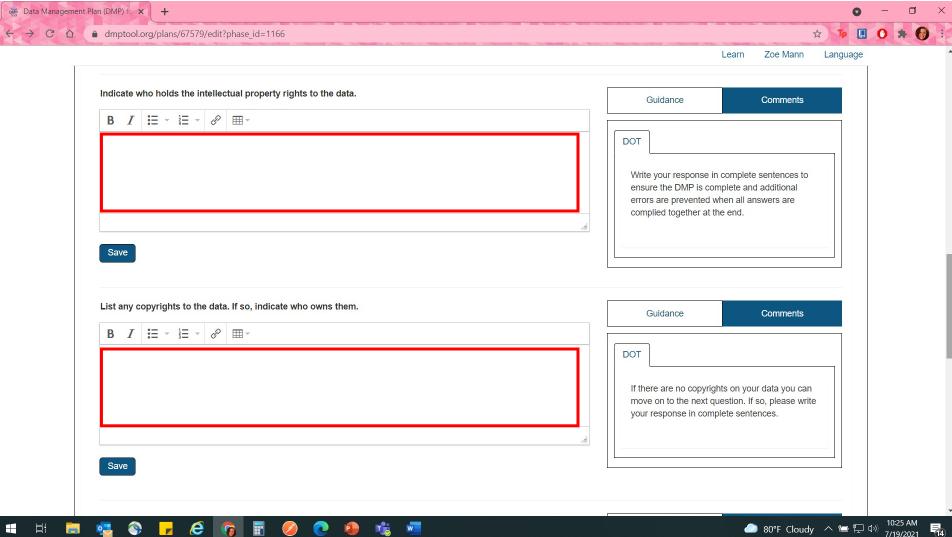
Access Policies



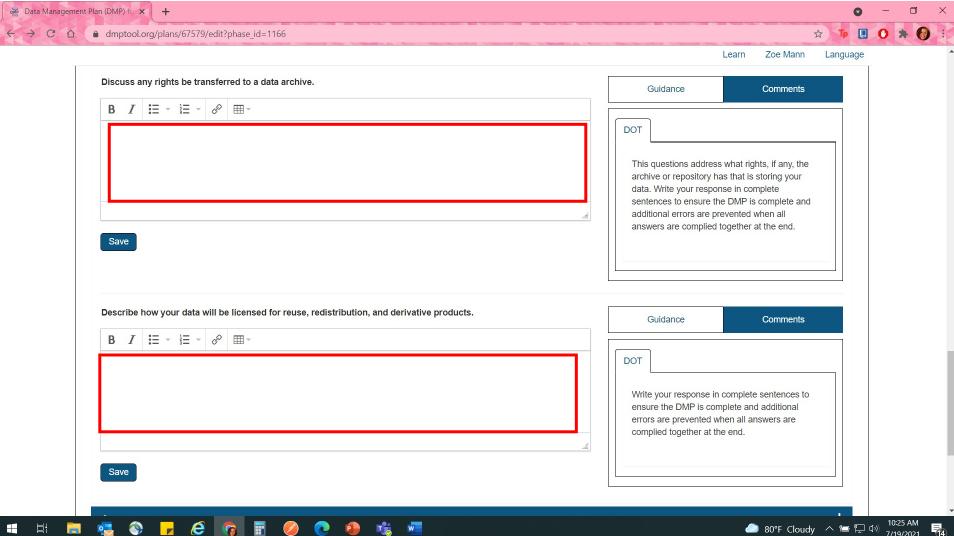
Re-Use, Redistribution, and Derivative

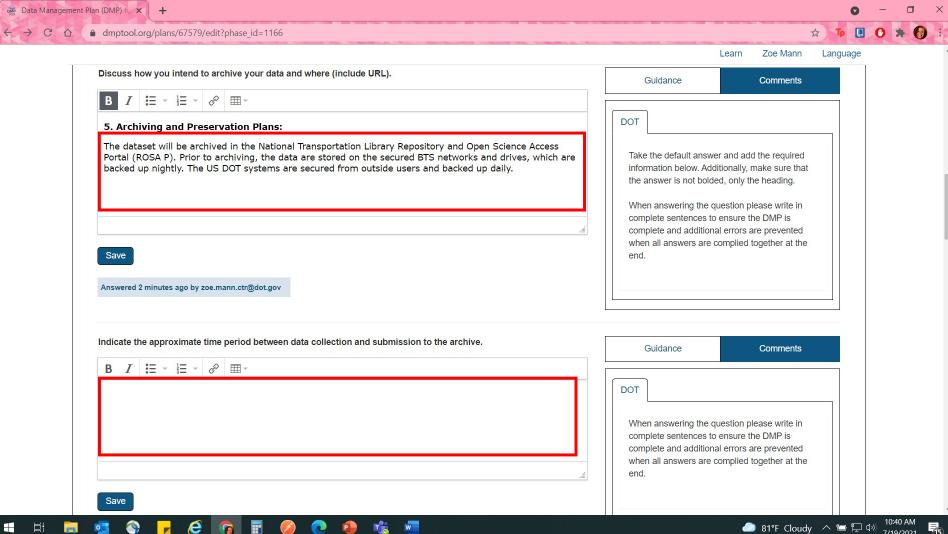


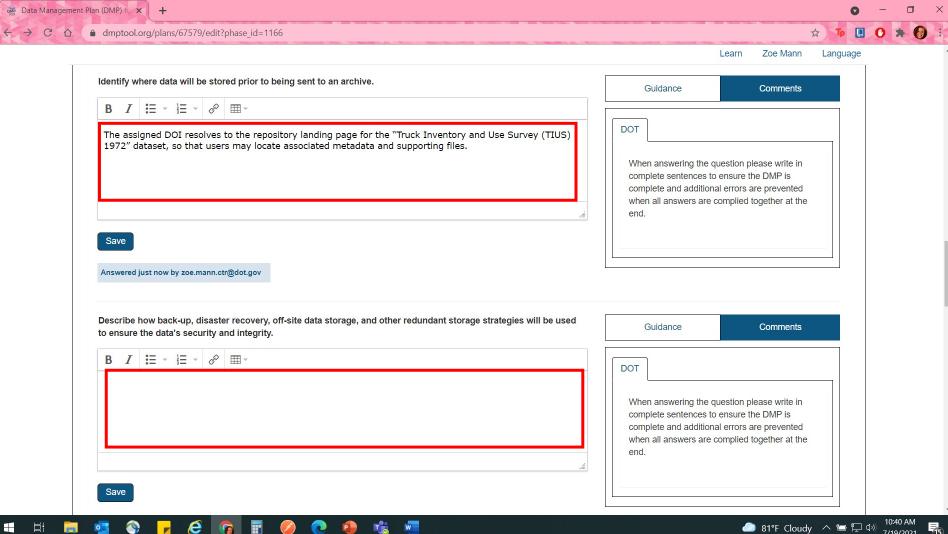
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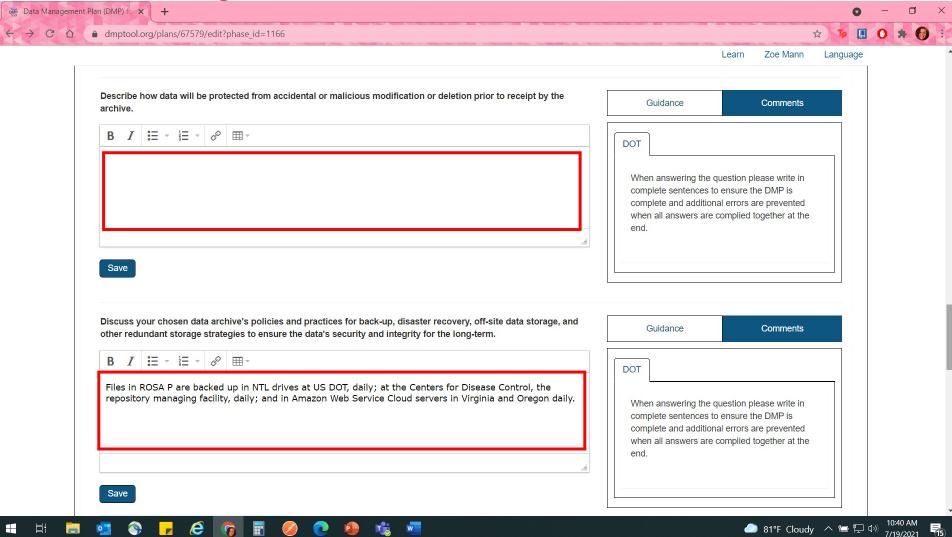


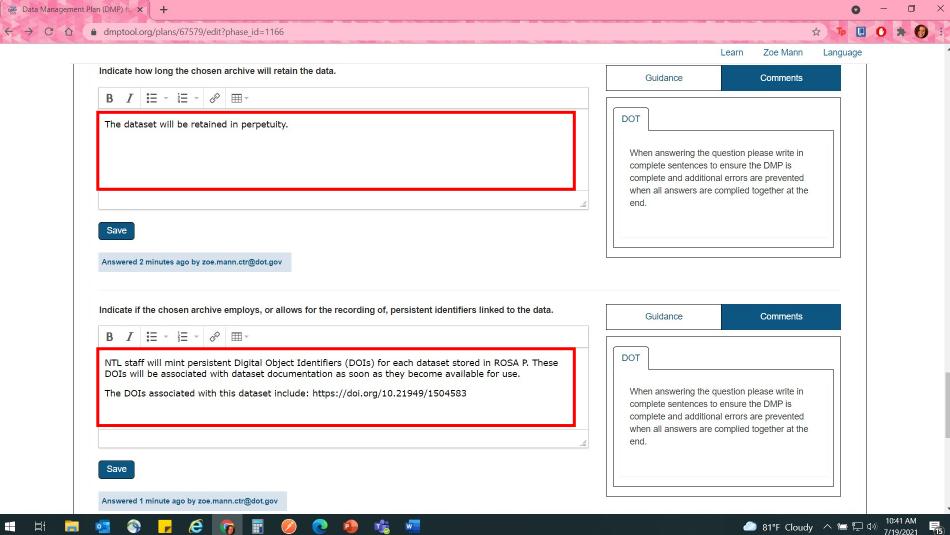
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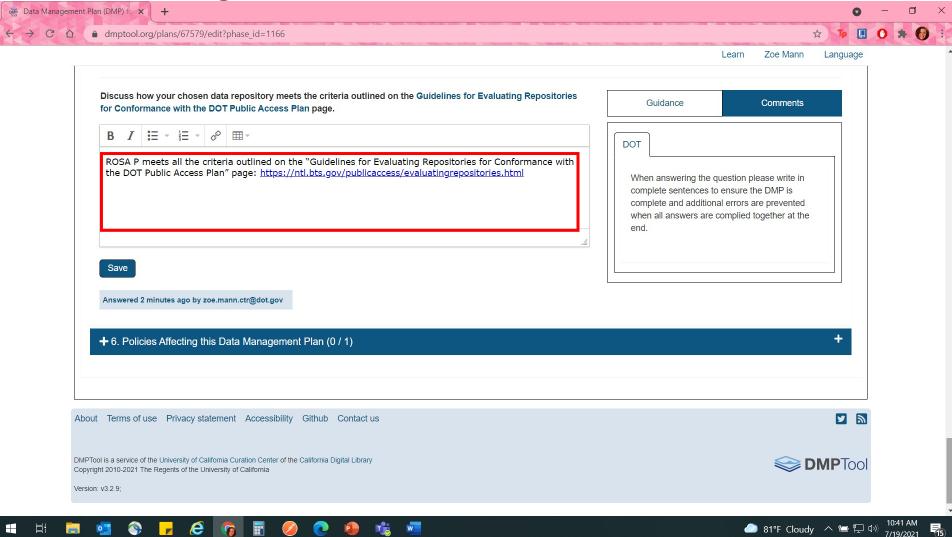




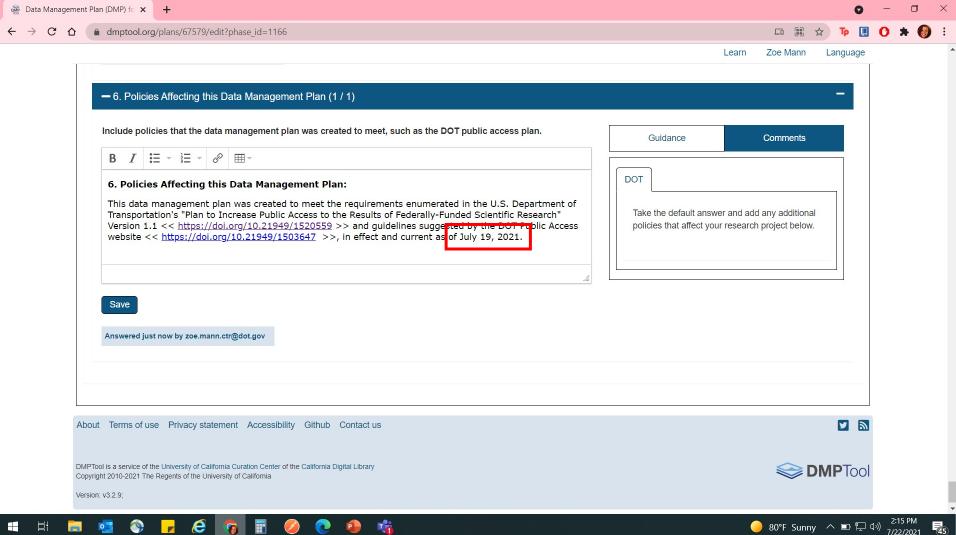




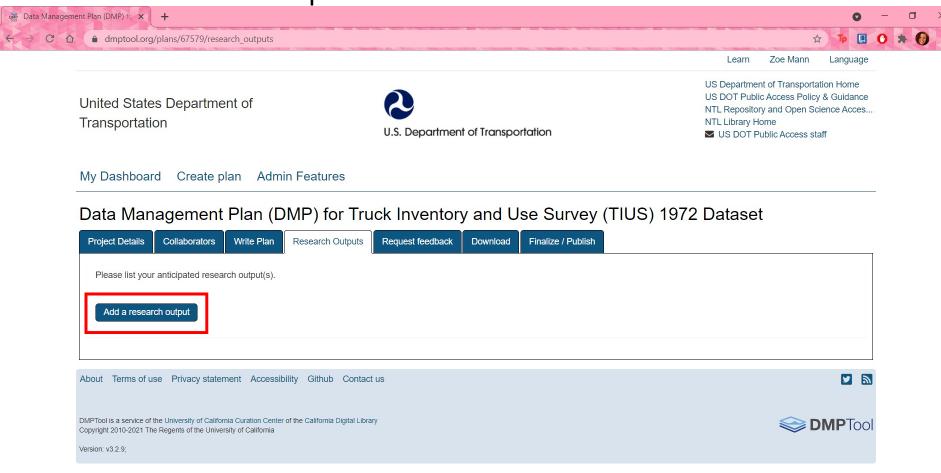




Policies Affecting this Data Management Plan

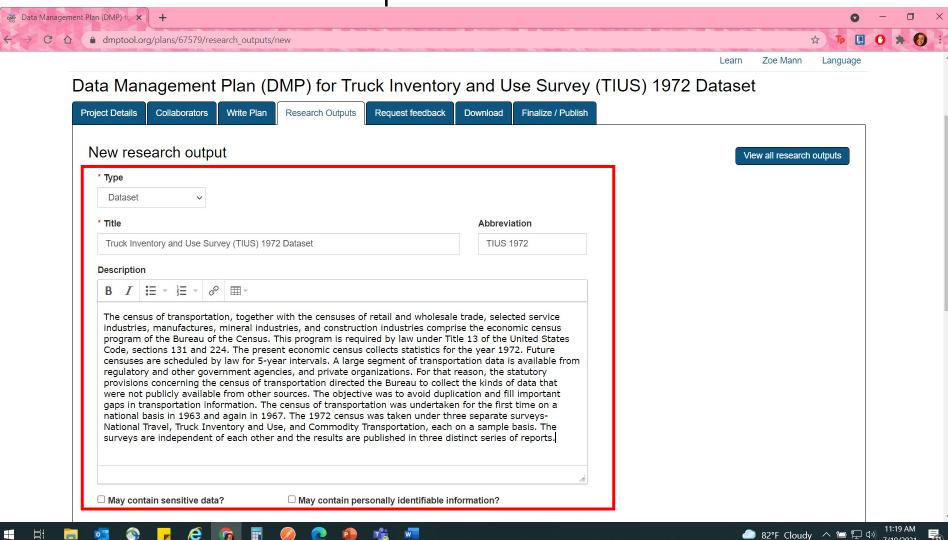


Research Outputs

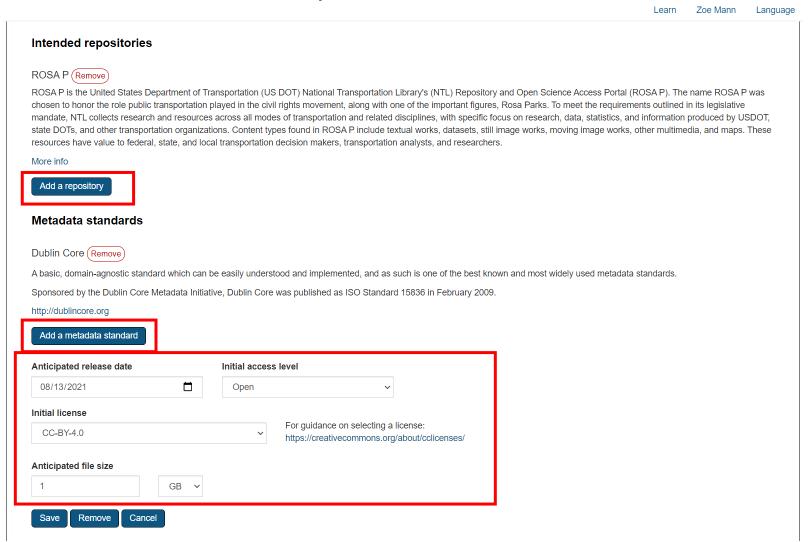




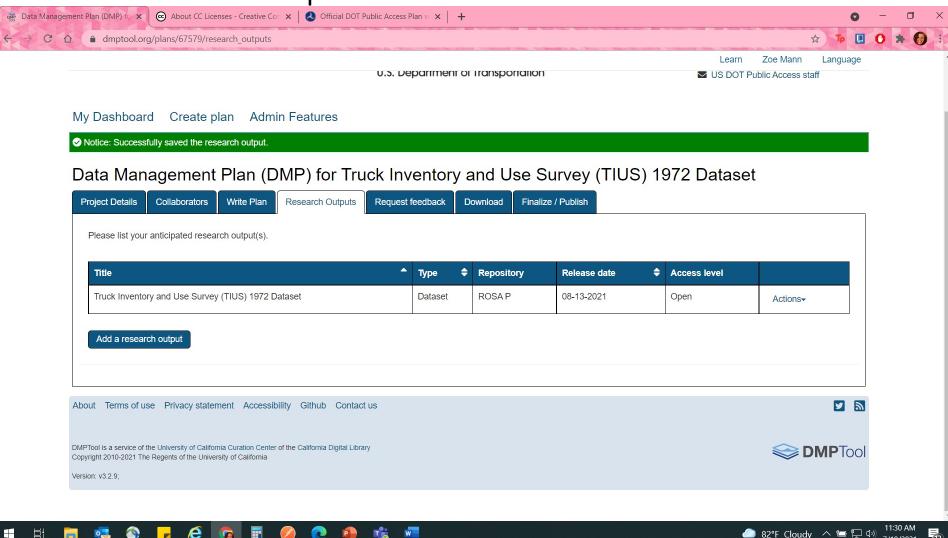
New research output



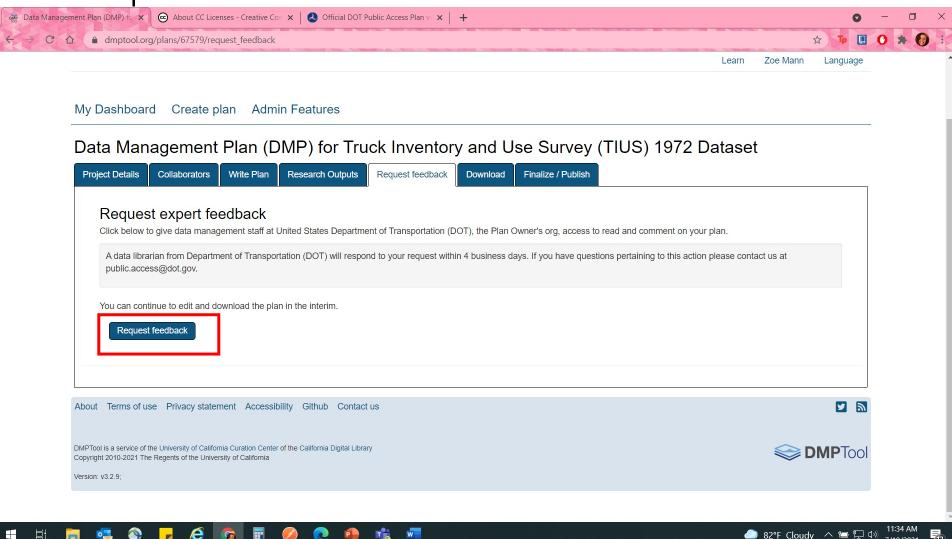
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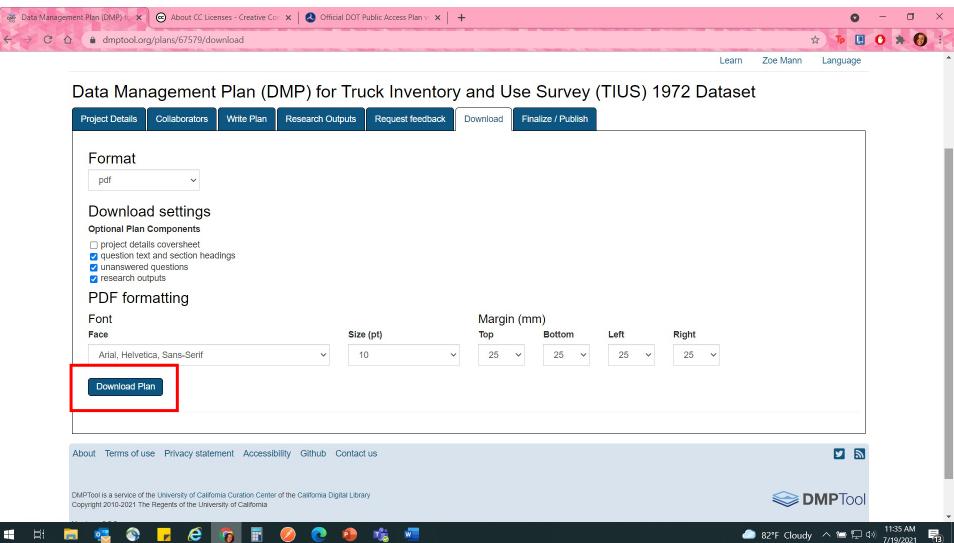
Research Outputs



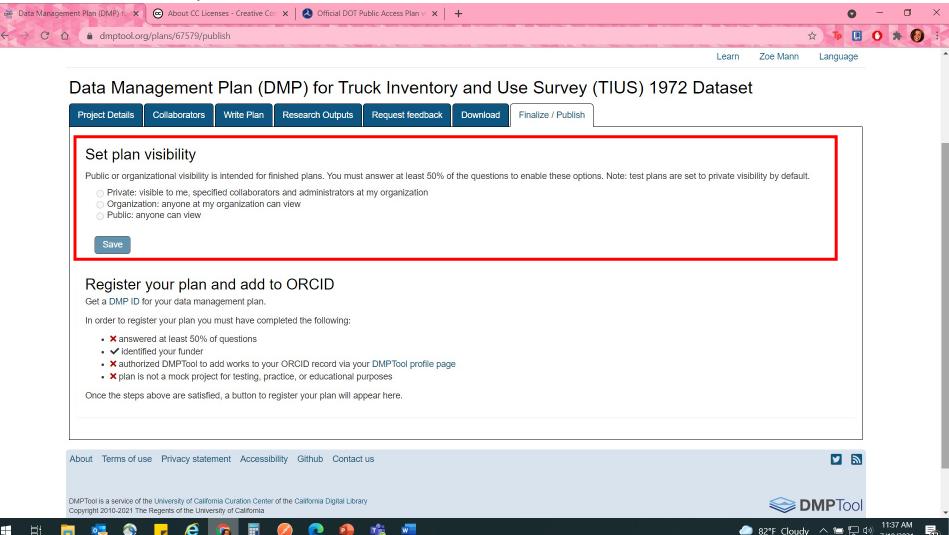
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